Temperature and Salinity Measurements in the Northwest Passage
Volume 3, March-April, 1984.

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1987

TEMPERATURE AND SALINITY MEASUREMENTS IN THE NORTHWEST PASSAGE
VOLUME 3, MARCH-APRIL, 1984.

by

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PREFACE

This report is the third of three data reports documenting water property measurements in the Northwest Passage of the Canadian Arctic Archipelago during March and April of 1982, 1983, and 1984. Each report deals with the activities undertaken during one year. Analysis and interpretation of these data appear in a separate technical report.

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ABSTRACT

Buckingham, W.R., R.A. Lake, and H. Melling, 1987. Temperature and Salinity Measurements in the Northwest Passage, Vol. 3, March-April, 1984.
Can. Data Rep. Hydrogr. Ocean Sci. No. 39: 604 p.

A three-year program of hydrographic measurements was undertaken in the months of March and April between 1982 and 1984 in the Canadian Arctic Archipelago by the Institute of Ocean Sciences of the Department of Fisheries and Oceans. The measurements were in the form of profiles, by Guildline CTD probe, of temperature and salinity as a function of pressure. The activities during each year of the study concentrated on a specific region of the Northwest Passage within the Archipelago. The emphasis of 1982 was on the western portion (M'Clure Strait, Prince of Wales Strait, and Viscount Melville Sound), in 1983 on the central portion (eastern Viscount Melville Sound and Barrow Strait), and in 1984 on the eastern portion (Barrow Strait and adjacent channels). This report discusses the aims of the project, the logistics of the 1984 field work, and summarizes the data acquired during that year in tabular and graphic form.

Key words: Arctic Archipelago, Northwest Passage, temperature, salinity.

RESUME

Buckingham, W.R., R.A. Lake, and H. Melling, 1987. Temperature and Salinity Measurements in the Northwest Passage. Vol. 3, March-April, 1984.
Can. Data Rep. Hydrogr. Ocean Sci. No. 39: 604 p.

De 1982 à 1984, l'Institut des Sciences Océanographiques du MPO a réalisé un programme triennal de quantifications hydrographiques en mars et avril dans l'archipel Arctique canadien. Ces quantifications ont pris la forme de profils, obtenus à l'aide de sonde CTP Guidline, de températures et de salinités en fonction de la pression. Les activités annuelles ont porté sur une région déterminée du passage du Nord-Ouest de l'archipel. En 1982, on a mis l'accent sur la partie ouest (M'Clure Strait, Prince of Wales Strait, Viscount Melville Sound), en 1983, sur la partie centrale (partie est du Viscount Melville Sound et Barrow Strait) et en 1984, sur la partie est (Barrow Strait et chenaux adjacents). Le présent rapport porte sur les buts du projet, le soutien logistique du travail sur le terrain en 1984 et les données recueillies cette année-là, présentées sous forme de tableaux et de graphiques.

Mots-clés: archipel Arctique, passage du Nord-Ouest, température, salinité.

ACKNOWLEDGEMENTS

The authors wish to thank various members of the Institute of Ocean Sciences whose diligent efforts helped to make this project a success. In particular they thank electronic technician R. A. Cooke, support technician S.W. Moorhouse, and J. W. Green from the computing section. Logistic support, and accommodation at Resolute Bay was provided by the Polar Continental Shelf Project of the Department of Energy, Mines and Resources. Meals, radio and accommodations were also made available at Rae Point by Panarctic Oils, Ltd. We sincerely thank both organizations, and the particular individuals involved for their cooperation and assistance. Hydrographic measurements by CTD beyond helicopter range from Resolute Bay were made by E.L. Lewis and R.G. Perkin of this Institute, on our behalf. Their assistance is gratefully acknowledged. The funding for this project was provided by the Arctic Marine Transportation Research and Development Programme.

1. INTRODUCTION

A three-year physical oceanographic study was undertaken between 1982 and 1984 in the Canadian Arctic Archipelago, centering on the complex of waterways known as the Northwest Passage. The study was carried out by the Department of Fisheries and Oceans at the Institute of Ocean Sciences (IOS). It extended from Amundsen Gulf in the west, through Prince of Wales Strait, M'Clure Strait, Viscount Melville Sound, Barrow Strait, and Lancaster Sound to Baffin Bay in the east (see Figure 1). The study also incuded the various passageways and basins bordering the Northwest Passage. The overall objective was to gain an understanding of the physical oceanic processes within the defined area of the Arctic Archipelago. Specifically this objective included the following goals:

1) the identification of the magnitude and direction of tidal and non-tidal currents,
2) the description of tidal propagation,
3) the identification of sources and destinations of various water-masses,
4) the identification of the relative importance of physical forces which determine currents and water-mass distribution (e.g. tidal forces, baroclinic forces related to horizontally inhomogeneous distribution of water density and non-tidal barotropic forces related to oceanic and atmospheric circulation),
5) the identification of temporal and spatial variability in current and water-mass distribution. Periods of particular importance are tidal (semi-diurnal and diurnal), seasonal, and interannual. Also of potential importance are singular or non-periodic events such as storm surges,
6) the estimation, to an order of magnitude, of the volume of water transport into and out of the study area and the partition of that transport.

The activities during each year of the study concentrated on a specific region of the Northwest Passage. The emphasis in 1982 was on the western portion, in 1983 the central portion, and in 1984 the eastern portion. The field studies were undertaken during the early spring months, at which time the solid ice-cover made a stable platform from which to work.

The 1984 field study was designed to examine the transport and modification of water in the vicinity of the major sills of Barrow Strait and Penny Strait, where upwelling and turbulent mixing are active processes. The existence of polynyas to the east of Queens Channel (south of Penny Strait) afforded the opportunity to examine the effectiveness with which areas of open water or thin ice bring about a significant loss of heat from the ocean to the atmosphere on a regional scale in winter. A distinctive northward flowing longshore current adjacent to Devon Island in Wellington Channel was investigated to elucidate the variability of flow and mass distribution in response to tidal forcing. Since CTD data collected from Crozier Strait, Pullen Strait and Wellington Channel in 1977 had shown dissimilar temperature/salinity properties to the east and west of Cornwallis Island, further CTD casts were done in 1984 to investigate this anomaly.

This report describes the acquisition of water structure information obtained in 1984 as conductivity/temperature/depth (CTD) profiles and presents the data in final processed form. Two field parties from IOS were engaged to make measurements covering a wide area. The first party, working from a helicopter, concentrated on the main study area, namely the

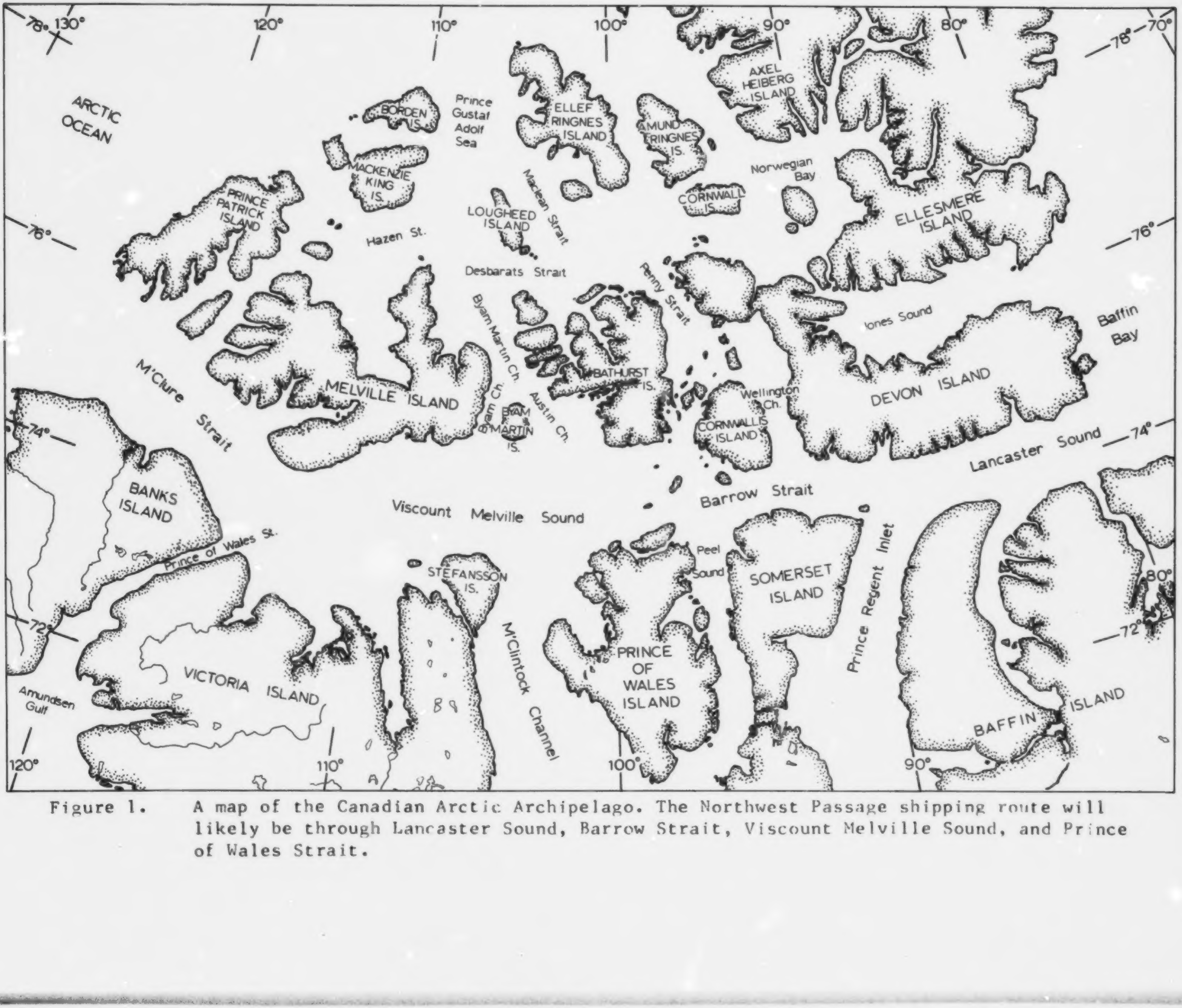
ARCTIC OCEAN
PRINCE PATRICK ISLAND
BORDEN IS.
MACKENZIE KING IS.
Prince Gustaf Adolf Sea
ELLEF RINGNES ISLAND
AMUND RINGNES IS.
AXEL HEIBERG ISLAND
Norwegian Bay
CORNWALL IS.
ELLESMERE ISLAND
LOUGHEED ISLAND
Maclean Strait
Hazen St.
Desbarats Strait
Penny Strait
Jones Sound
Baffin Bay
DEVON ISLAND
MELVILLE ISLAND
Byam Martin Ch.
Byam Ch.
BYAM MARTIN IS.
Austin Ch.
BATHURST IS.
Wellington Ch.
CORNWALLIS ISLAND
Lancaster Sound
M'Clure Strait
BANKS ISLAND
Viscount Melville Sound
Barrow Strait
Prince of Wales St.
STEFANSSON IS.
Peel Sound
SOMERSET ISLAND
Prince Regent Inlet
M'Clintock Channel
PRINCE OF WALES ISLAND
VICTORIA ISLAND
BAFFIN ISLAND
Amundsen Gulf
130°
120°
110°
100°
90°
80°
70°
78°
76°
74°
72°

Figure 1. A map of the Canadian Arctic Archipelago. The Northwest Passage shipping route will likely be through Lancaster Sound, Barrow Strait, Viscount Melville Sound, and Prince of Wales Strait.

waterways adjacent to Cornwallis Island. These included Barrow Strait (as far west as the eastern boundary of the 1983 Northwest Passage Study), Wellington Channel, Penny Strait, and McDougall Sound. The second party, working from a Twin Otter, undertook CTD measurements in several outlying areas, including M'Clure Strait, Viscount Melville Sound, Sverdrup Basin, Peel Sound, Prince Regent Inlet, and Lancaster Sound. The second party also occupied a series of CTD stations in the area north of Prince Patrick Island extending from the continental shelf into the Beaufort Sea. This series was part of a separate study examining the Arctic shelf region. The relevant CTD station locations are indicated by the square symbols in Figure 2. Some of the symbols are open squares and are used only for convenience to represent the closely-spaced stations. Data reports covering the activities during 1982 and 1983 may be found in Volumes 1 and 2 of this report.

The study area has not been extensively investigated previously due to its remoteness and to the difficulty of ship operations. The sea surface is completely frozen during most of the year, and is often ice-choked during the short navigation period. Previous oceanographic research in the Arctic Archipelago has been tabulated by Fissel, Knight and Birch (1984). The earliest significant collection of oceanographic data was accomplished from ships in summer during the 1950's and 1960's. These data were sufficient to delineate the regional water-mass characteristics. The change from classical to modern electronic instrumentation during the 1960's and 1970's coincided with a gradual change from ship-based operations in summer to aircraft and tracked-vehicle based operations on sea ice during spring (February to July). In 1977 and 1978 investigators from the Physical Oceanography Group of the Canada Centre for Inland Waters completed a number of CTD transects across Viscount Melville Sound, Prince of Wales Strait, and adjacent channels. In 1978, a comprehensive survey of Barrow Strait was conducted by the same group (Prinsenberg, 1978), and in 1979, this work was carried into the channels of the Queen Elizabeth Islands (Peck, 1980a, b). In 1981, an ambitious 3-year study of Barrow Strait and adjacent channels was initiated (Prinsenberg and Sosnoski, 1983a, b, c). Current measurements were made at the same time (Peck, 1978 and Prinsenberg, 1978). Current data across the western end of Viscount Melville Sound were gathered in 1979 as part of the Polargas Project (1979). A number of tidal height measurements were made during 1979 and 1980 as part of the Bridport Inlet studies by IOS. The Canadian Hydrographic Service also made extensive tidal height measurements in 1977, and an additional tidal height record was obtained as part of the Polargas program in 1979.

The present study involved measurements by CTD probe, recording current meters, tide gauges, and meteorological stations. This report deals solely with the CTD measurements. Section 2 describes the physical setting and bathymetry of the study area and the CTD station locations during the 1984 field trip. Section 3 recounts the logistics, the equipment used, and the timing of the measurements, while Section 4 deals with the data processing procedures. The data are presented in listings and plots in the Appendix along with a cross-reference table relating station identification to experiment number.

2. PHYSICAL SETTING AND STATION LOCATIONS

2.1 Arctic Archipelago

The Canadian Arctic Archipelago consists of a large group of islands lying on the extensive polar continental shelf of North America (Figure 1). The

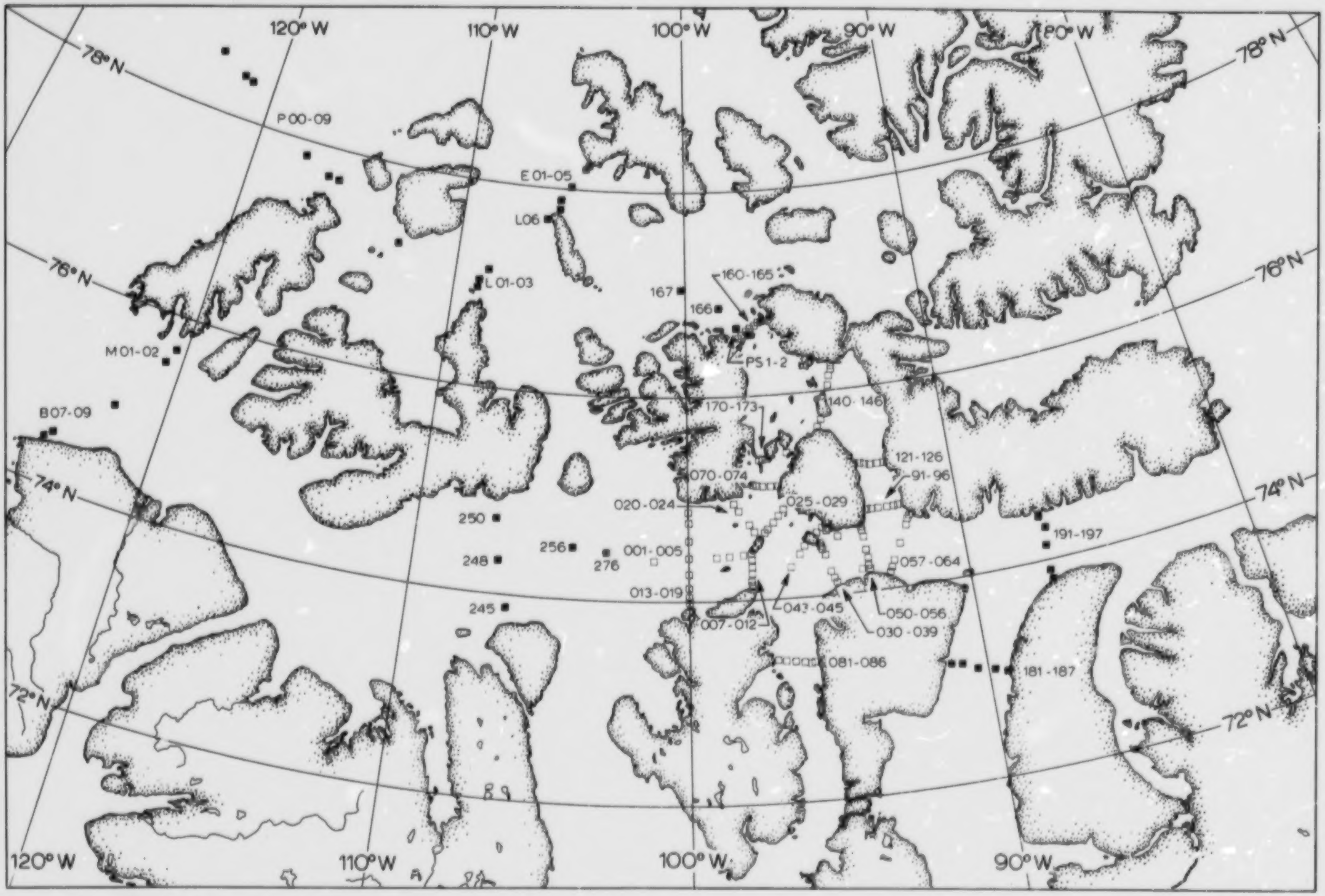
120° W
110° W
100° W
90° W
80° W
78° N
76° N
74° N
72° N
P00-09
E01-05
L06
L01-03
M01-02
B07-09
167
166
160-165
PS1-2
170-173
140-146
121-126
91-96
070-074
020-024
025-029
250
256
248
276
001-005
057-064
191-197
013-019
245
007-012
043-045
050-056
030-039
081-086
181-187

Figure 2. Locations of CTD stations occupied throughout the Arctic Archipelago in March-April, 1984. Square symbols indicate station locations.

Archipelago extends roughly 1500 kilometres between the 68[and 82[North latitude and about 2700 kilometres between 60[and 130[West longitude (at 70[North). These islands are bounded to the north and west by the Arctic Ocean and the Beaufort Sea respectively, to the south by the North American continent and to the east and southeast by Nares Strait, Baffin Bay, Davis Strait, and the Labrador Sea. For convenience, the Archipelago is often divided into three sections from north to south as follows: the Sverdrup Basin lying within the Queen Elizabeth Islands (i.e., all islands north of Parry Channel); Parry Channel, consisting of M'Clure Strait, Viscount Melville Sound, Barrow Strait, and Lancaster Sound; and the "Southern Channels" comprising Amundsen Gulf, M'Clintock Channel, the Gulf of Boothia, and other, lesser, waterways.

2.2 General Bathymetry

The channels and basins throughout the Archipelago are in general substantially shallower than the adjoining oceanic basins. The continental shelf effectively limits free passage of water to maximum depths of about 450 metres into Sverdrup Basin, to about 380 metres into M'Clure Strait, and to about 360 metres into Amundsen Gulf. To the east, Baffin Bay has depths up to 2300 metres, but the sill in Davis Strait (to the south of Baffin Bay) limits deep water exchange with the North Atlantic to depths of less than 700 metres. Another shallow entrance (50 metres) to the Archipelago from the North Atlantic exists through Hudson Strait, Foxe Basin, and Fury and Hecla Strait in the south. The deepest continuous passage through the Archipelago exists through Parry Channel and has a limiting sill of 125 metres in Barrow Strait. The passageways connecting Sverdrup Basin to the southern channels (M'Clure Strait, Viscount Melville Sound, Barrow Strait, etc.) are in general constricted by shallow sills on the order of 100 metres in depth. South of Parry Channel depths are characteristically shallow (mostly less than 200 metres) with the exception of some deeper areas of greater than 400 metres extending into Prince Regent Inlet from Lancaster Sound, and into Franklin Strait from Barrow Strait.

2.3 Station Locations and Local Bathymetry

The 1984 Northwest Passage field study was designed to be a continuation of both the 1983 Northwest Passage Oceanography Programme (see Vol. 2) and the Bayfield Laboratory for Marine Science and Surveys (BLMSS) studies of Barrow Strait (Prinsenberg, 1978; Prinsenberg and Sosnoski, 1983). The main concentration of CTD measurements was made in the various waterways adjacent to Cornwallis Island. It was intended that the measurements would be spatially distributed so as to be sufficient for a large scale description of the water structure within the study area. The locations of the fifteen channel-wide transects crossing the many approaches and straits within the main study area can be seen in Figure 2. LeBlond (1980), among others, has pointed out that the small internal Rossby radius of deformation at high latitudes can lead to very narrow geostrophic currents along a shoreline. Thus, the spacing of the CTD stations along any transect was made smaller near the shore, in order to help delineate any possible narrow baroclinic currents "hugging" the shore. Several other transects were also carried out in areas removed from, but still connected to the main study area. The location of these transects can also be seen in Figure 2.

The depth of the channels in the main study area is in general quite shallow (150 to 200 metres) and the seafloor flat especially in Barrow Strait, Peel Sound, and Wellington Channel as can be seen in Figure 3. This figure shows the 1984 IOS CTD stations as solid circles, a 1983 IOS CTD station (89) as a solid triangle, and some of the 1983 BLMSS CTD stations as solid stars. A small basin of 250 metres depth exists in Crozier Strait (Stations 170, 171, 172), while larger basins of 300 metres depth can be seen at the north end of Wellington Channel and at the south end of Penny Strait. North of Penny Strait lie Maclean Strait, Desbarats Strait, Hazen Strait, and the Prince Gustaf Adolf Sea (Figure 4). The depths here are generally greater than in the Wellington Channel and Barrow Strait area, with depths ranging from 200 to 500 metres. The bathymetry of Penny Strait, which joins these two regions, can be seen in Figure 5 which indicates a limiting sill depth of about 100 metres. Bathymetry is complex in Penny Strait. Figure 6 shows that M'Clure Strait, in the vicinity of the CTD stations, has steep sides and a wide flat bottom at about 500 metres depth. The sectional shapes of Lancaster Sound and Prince Regent Inlet in the east are characterized by steep sides and a smooth bottom at about 400 metres depth (Figure 7).

3. DATA COLLECTION

3.1 Instrumentation

A series of conductivity and temperature versus pressure profiles was acquired in the study area during March and April 1984. A total of 142 CTD profiles was obtained at the locations indicated in Figure 2. Salinity samples and *in situ* thermistor measurements were taken from time to time in order to check the calibration of the CTD probe. During the sampling period the area was covered by landfast ice, which provided a stable platform from which to work. The profiling system was transported by and operated from a Bell 206-L1 helicopter (or from a deHavilland Twin Otter in outlying areas). Station positions were determined using a VLF/Omega Global Navigation System (GNS500A) on the aircraft. The accuracy of this system in coastal areas was, with careful use, better than one kilometer. However, excessive maneuvering at low elevation, and snow clouds raised during landing, degraded performance, and dead-reckoning navigation logs were therefore kept for crosschecking. GNS initializations were performed at geodetic markers.

The profiling system used was a Guildline Model 8706 digital CTD probe together with a Guildline Model 87102 control unit. The primary probe used in the main study area (around Cornwallis Island) was IOS's probe number 4, with probe number 6 being used as a back-up when difficulties were experienced with probe number 4. The second field party, which took measurements in the outlying areas, used IOS's CTD probe number 5. The probes were fitted with three standard sensors: a conductivity cell, a thermometer, and a pressure sensor. The data were transmitted digitally from the probe to the control unit along a single-conductor, probe-supporting cable. The manufacturer's specifications for the CTD sensors and their associated electronics are shown in Table 1. The model and serial number of each sensor are indicated in Table 2.

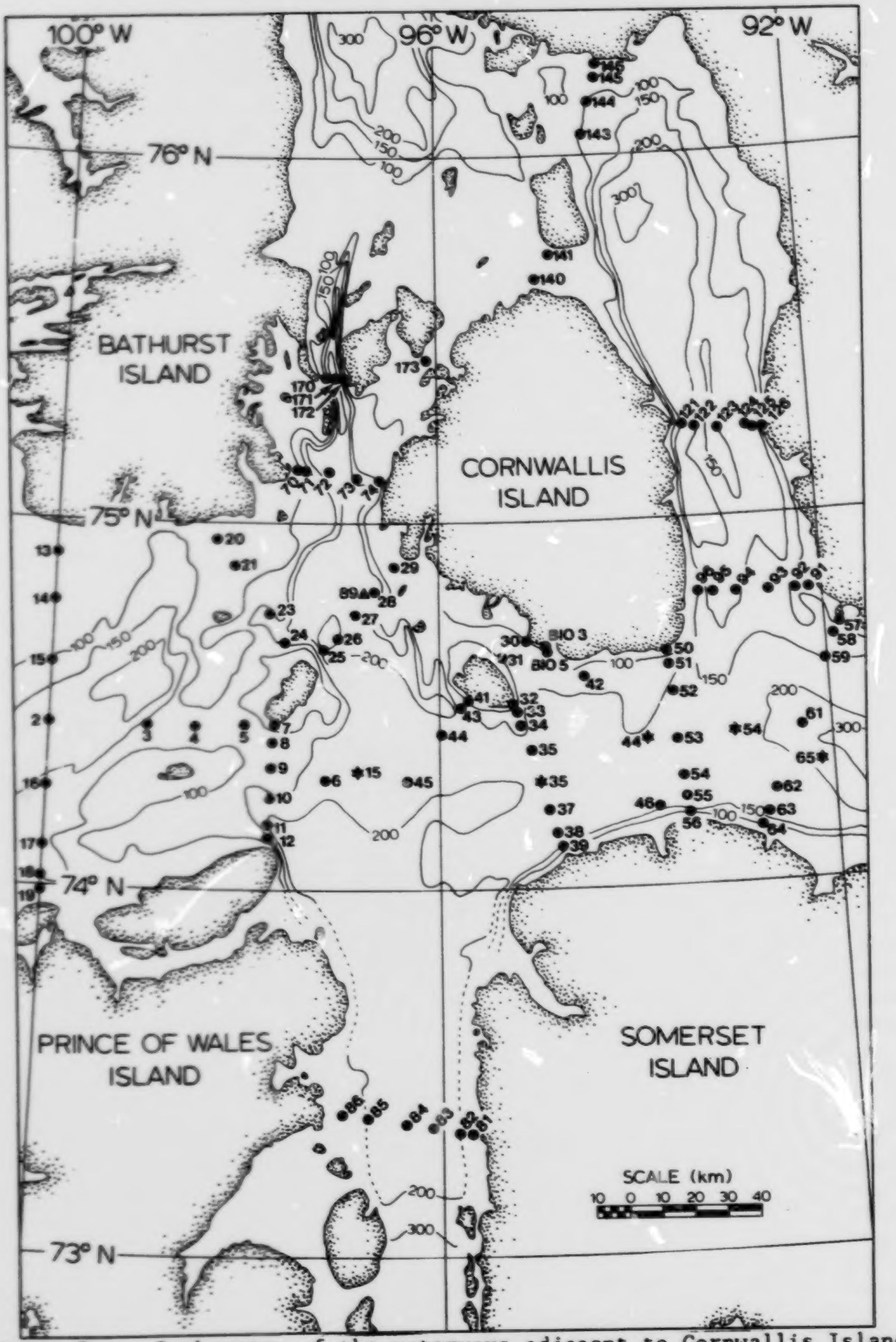
100° W
96° W
92° W
76° N
75° N
74° N
73° N
BATHURST ISLAND
CORNWALLIS ISLAND
PRINCE OF WALES ISLAND
SOMERSET ISLAND
SCALE (km)
10 0 10 20 30 40
BIO 3
BIO 5
89
100
150
200
300

Figure 3. Bathymetry of the waterways adjacent to Cornwallis Island. The circular symbols indicate CTD stations occupied by IOS in March-April, 1984. The star symbols indicate BLMSS stations and the triangle symbol indicates a 1983 IOS station.

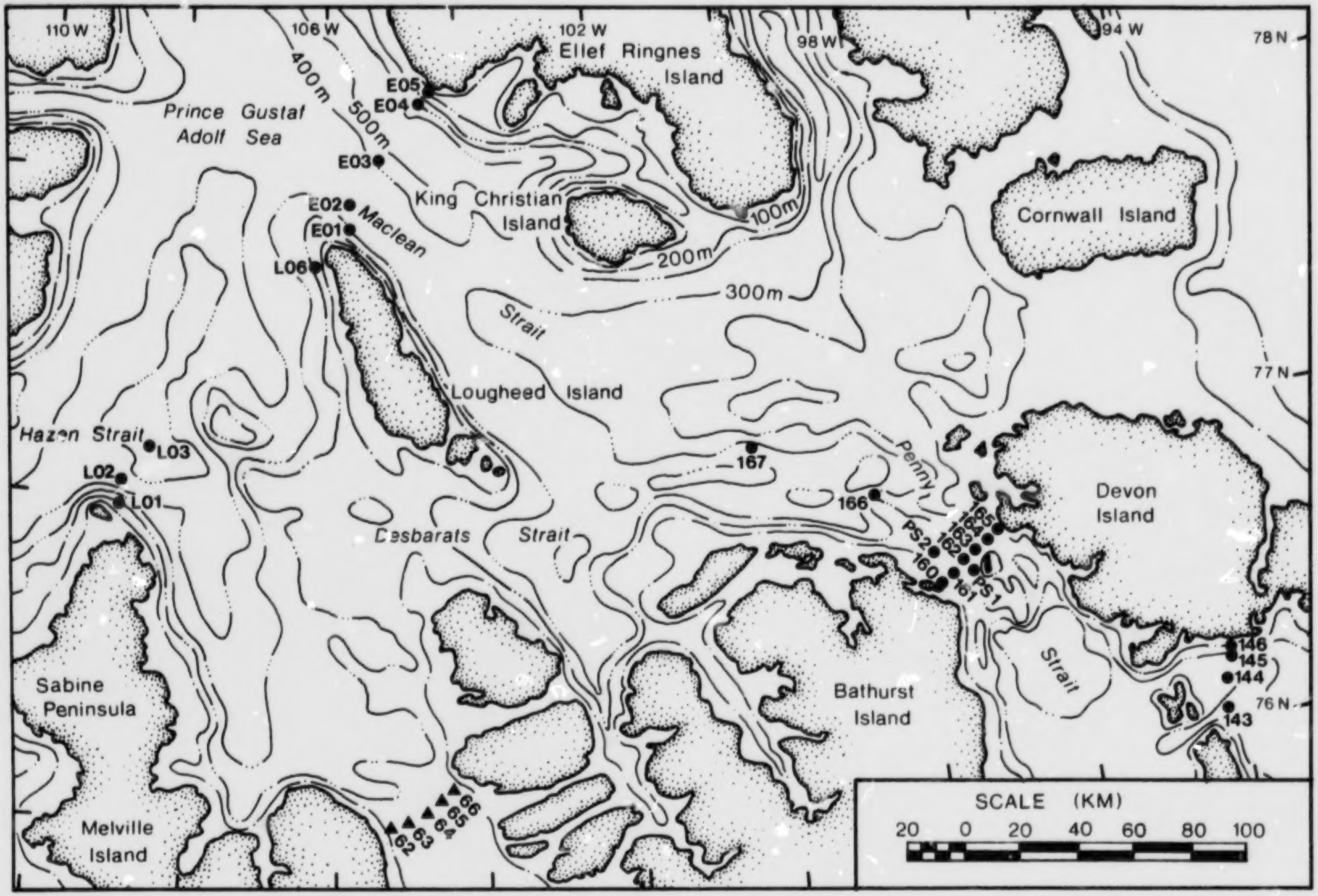
110 W
106 W
102 W
98 W
94 W
78 N
77 N
76 N
Ellef Ringnes Island
Prince Gustaf Adolf Sea
400m
500m
E05
E04
E03
E02
E01
L06
Maclean
King Christian Island
100m
200m
300m
Cornwall Island
Strait
Lougheed Island
Hazen Strait
L03
L02
L01
Desbarats Strait
167
166
Penny
165
164
163
162
161
160
PS2
PS1
Devon Island
Strait
146
145
144
143
Bathurst Island
Sabine Peninsula
Melville Island
66
65
64
63
62
SCALE (KM)
20
0
20
40
60
80
100

Figure 4. Bathymetry of Sverdrup Basin and Penny Strait. The circular symbols indicate CTD stations occupied in March-April, 1984. The triangular symbols indicate 1983 stations.

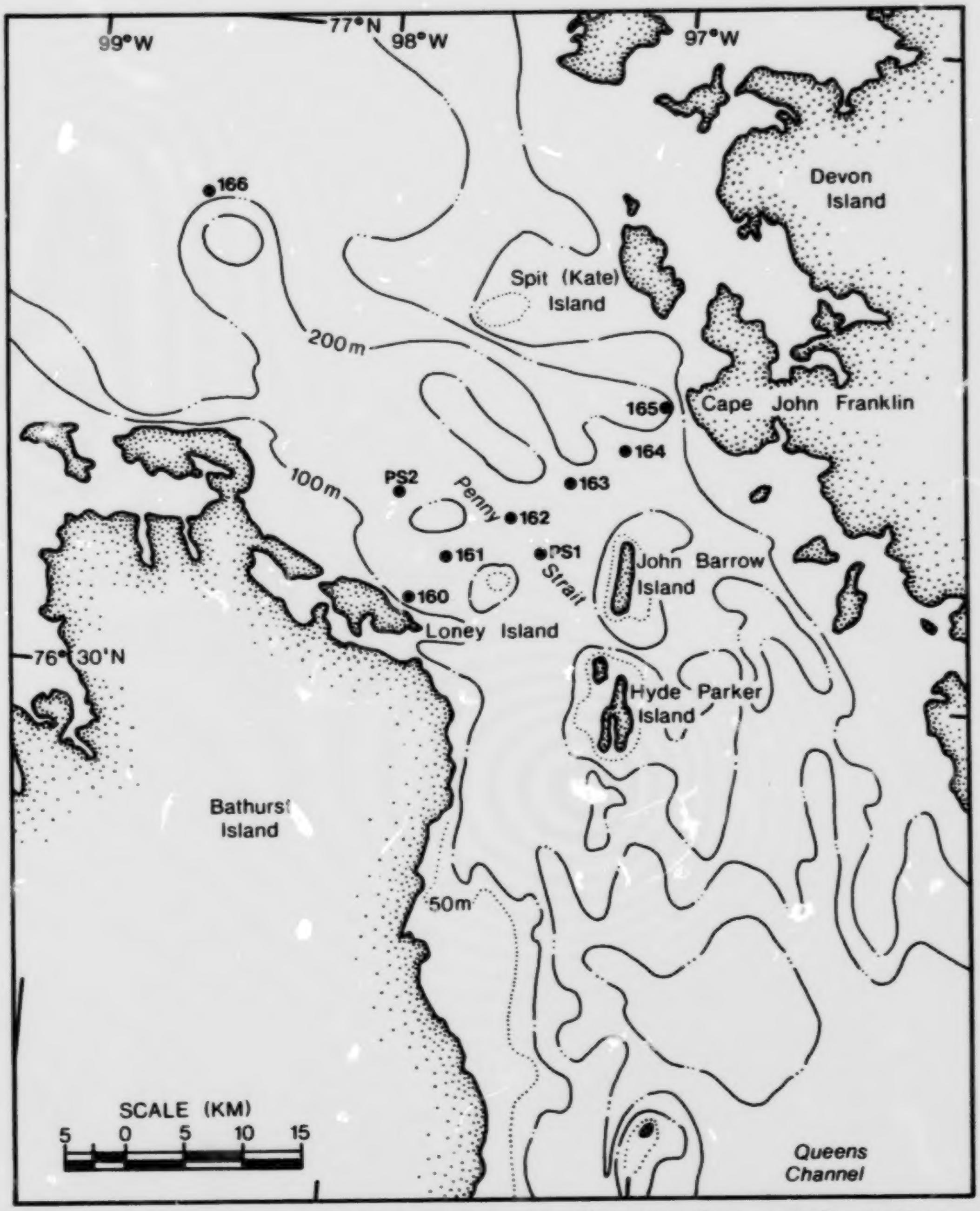
77°N
99°W
98°W
97°W
166
Devon Island
Spit (Kate) Island
200m
165
Cape John Franklin
164
163
100m
PS2
Penny Strait
162
PS1
161
John Barrow Island
160
Loney Island
76°30'N
Hyde Parker Island
Bathurst Island
50m
SCALE (KM)
5
0
5
10
15
Queens Channel

Figure 5. Bathymetry of Penny Strait. The circular symbols indicate CTD stations occupied in March-April, 1984. The sill lies approximately along the line of stations 160-165.

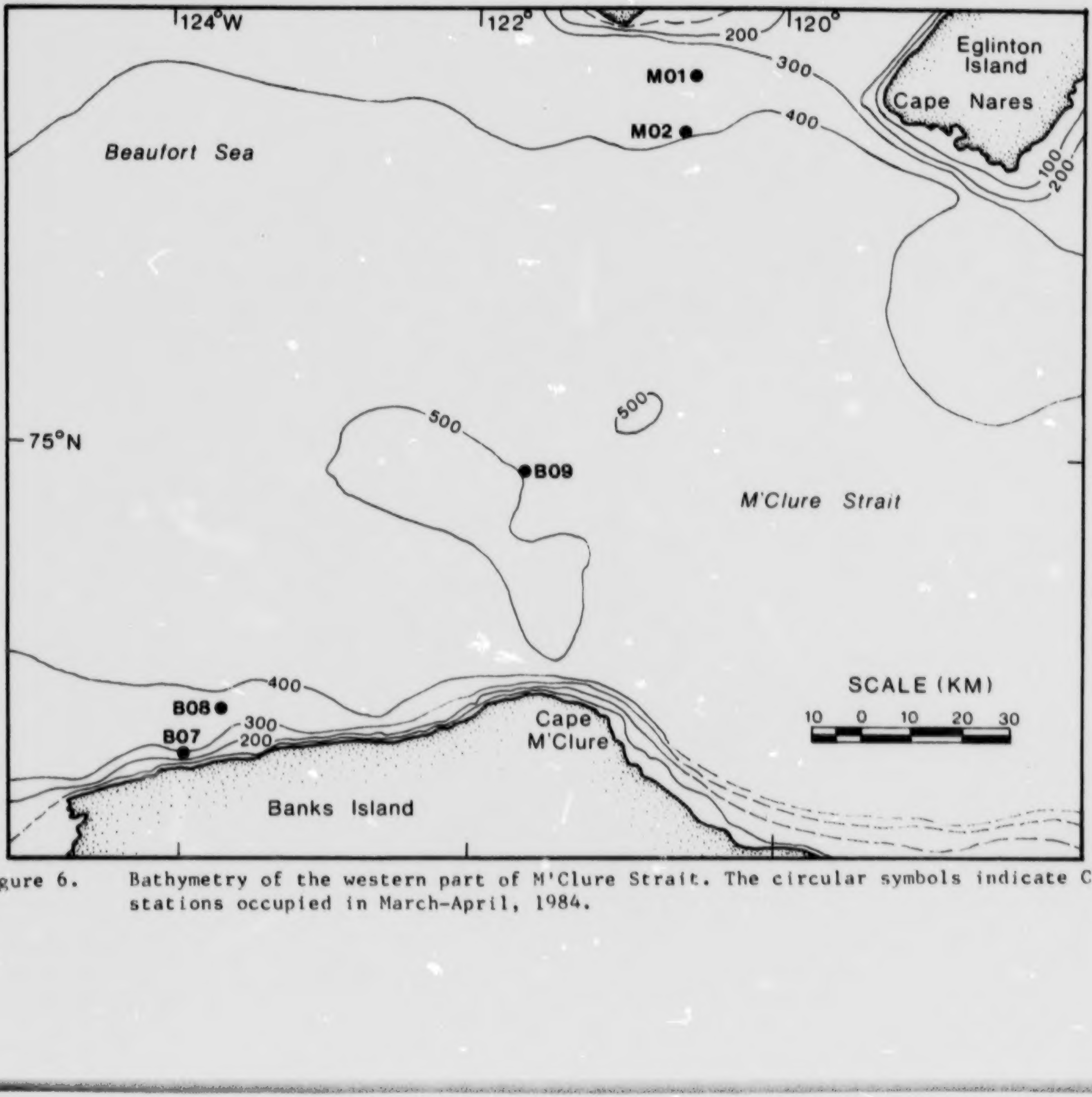
124°W
122°
120°
75°N
200
300
400
100
200
500
500
400
300
200
M01
M02
B09
B08
B07
Beaufort Sea
M'Clure Strait
Eglinton Island
Cape Nares
Cape M'Clure
Banks Island
SCALE (KM)
10
0
10
20
30

Figure 6. Bathymetry of the western part of M'Clure Strait. The circular symbols indicate CTD stations occupied in March–April, 1984.

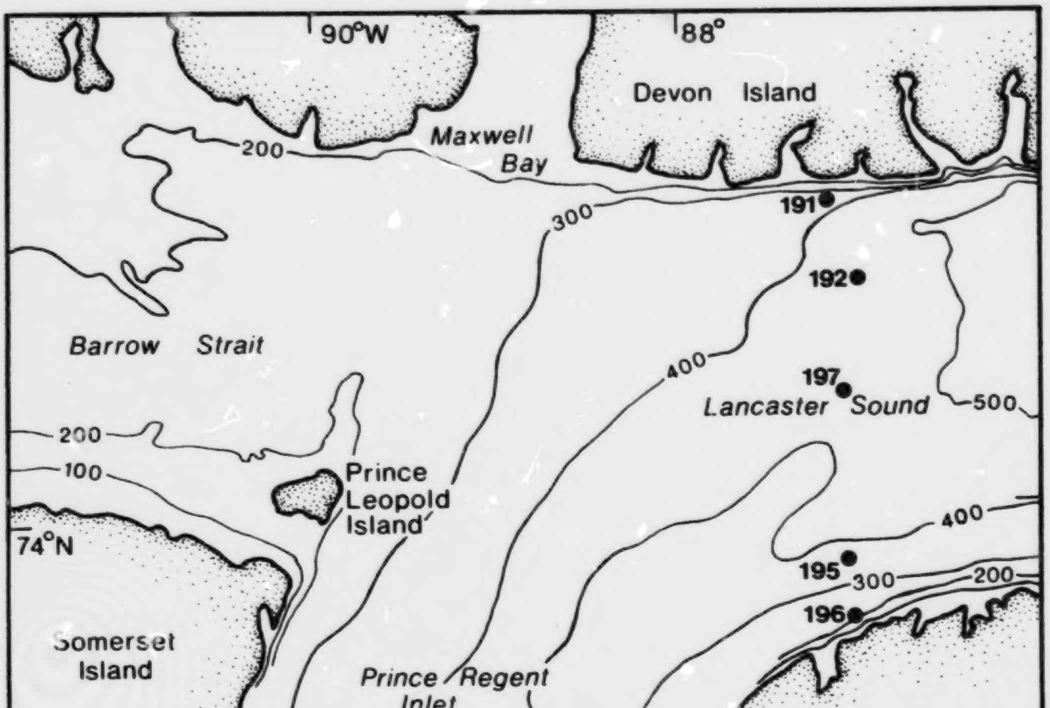
90°W
88°
Devon Island
Maxwell Bay
200
300
191
192
400
197
Lancaster Sound
500
Barrow Strait
200
100
Prince Leopold Island
74°N
400
195
300
200
196
Somerset Island
Prince Regent Inlet
Brodeur Peninsula
Baffin Island
300
400
400
300
181
182
187
185
186
73°
SCALE (KM)
10 0 10 20 30

Figure 7. Bathymetry of Prince Regent Inlet and Lancaster Sounds. The circular symbols indicate CTD stations occupied in March-April, 1984.

Table 1

Specifications for Guildline CTD

Function	Range	Accuracy	Resolution	Stability	Response Time
Cond.*	.110 to 40	±.005	±.001	±.002/6 mos.	<50 msec.
Temp.	-2°C to 30°C	±.005°C	±.0005°C	±.005°C/6 mos. ±.002°C/30 days	<50 msec.
Press.	0 to 1500 dbar	±.15% f.s.	±.01% f.s.		<50 msec.

*specifications for conductivity are given as equivalent salinities

Table 2

CTD Sensor Model and Serial Numbers

		Serial Number		
Sensor Type	Model Number	Probe 4	Probe 5	Probe 6
Conductivity	87410	41671/46731	43591	44974
Temperature	87401	49497	44501	46719
Pressure	207D45	513578	400280	
	87422 (Probe 6)			48090

The CTD interrogated each of its sensors at a rate of 25 times per second. The probe was normally lowered at a rate of about 1.5 metres per second, which meant that the vertical spatial sampling interval was about 0.06 metre. This fall rate was used in order that the response characteristics of the conductivity and temperature sensors would be matched (Perkin and Lewis, 1982).

In addition to the three standard sensors, the CTD probe was equipped with a device to warn the winch operator when it was nearing the ocean floor. This device consisted of a lead weight which was suspended beneath the probe by a 5- or 10-metre length of nylon line. The line was connected to a magnetic switch which de-activated a reed relay when the tension in the nylon line was released by the lead weight touching the seafloor. For purposes of obtaining water samples, a Knudsen reversing bottle was mounted on the cable above the probe. The bottle was connected to a bottle-trip reed switch which was activated when the bottle was tripped to obtain a water sample. Tripping of the bottle occurred during the probe's descent in the standard manner using a messenger dropped down the cable. The touchdown and bottle-trip reed switch values were recorded onto the digital data tape along with the conductivity ratio, temperature, and pressure data.

3.2 CTD Station Procedures

The procedures for conducting a CTD cast were as follows. At the chosen location as determined using the GNS, the helicopter (or Twin Otter) landed and a gasoline powered generator was started. The generated power was used first to drill an eight-inch diameter hole through the sea ice with an ice auger turned by a one-inch shaft electric drill (Black and Decker), and thereafter to power the electronics. After the snow and ice fragments had been cleaned from the hole, the ice thickness was measured and a bottom depth sounding was taken using a Furuno FM-22B depth sounder. The CTD probe was then lowered to a depth of 15 metres as determined by a previously-measured mark on the winch cable. Power was applied to the probe and the output was monitored on the control unit until the readings had stabilized, usually after about ten minutes. The probe was then raised to within 3 or 4 metres of the surface and the audio tape recorder was started. The probe was then lowered at a speed of about 1.5 metres per second until within 30 metres of the bottom. At this point, the descent rate of the probe was slowed to about 1 metre per second; the probe was stopped when the touchdown switch was activated. After the tape recorder had been stopped, the probe was pulled back to the surface. Once the probe was secured within the helicopter, the conductivity cell was filled with a methyl alcohol solution to prevent seawater from freezing within the cell. Methyl hydrate was also applied to the temperature-sensor coil to keep ice from forming on its surface.

If a salinity sample was required at the station, it was obtained with the Knudsen bottle mounted immediately above the CTD probe. The bottle was tripped as the probe descended, in order to provide a salinity value almost simultaneous with the probe measurements for calibration of the CTD probe. From each Knudsen bottle, three samples were drawn into 150-mL bottles. Some of these water samples were analysed immediately in Resolute while the remaining samples were shipped to the laboratory at IOS. Those analysed at Resolute were again analysed at IOS to check for consistency. In both cases, a Guildline 8400 AutoSal, standardized with Copenhagen seawater, was used for the salinity analysis.

Temperature-calibration data were obtained by attaching a pair of bead thermistors adjacent to the temperature sensor of the probe. The probe, with attached thermistors, was lowered as far as the thermistor cables permitted, about 8 metres below the surface. It was verified that the water at this depth was homogeneous and stable in temperature. The thermistors were connected to an electrical bridge circuit which was used to determine the temperature from each thermistor. This procedure was carried out prior to the CTD profiling at that station. No special effort was made to ventilate the temperature-sensor and thermistors during calibration.

After each day of CTD measurements the data tapes were played back through a Hewlett-Packard 9825 computer. Profiles were plotted and checked for quality and instrument performance. In the case of operations from a Twin Otter, immediate data display and inspection were possible using a Hewlett-Packard computer/plotter system on the aircraft.

3.3 Calibration

A CTD pressure offset calibration was done immediately prior to each cast by lowering the probe to 15 metres depth as indicated by a measured mark on the conducting cable. This depth was assigned the pressure of 15.15 decibars. The difference between this pressure and that indicated on the control unit was then designated as the pressure offset for the entire cast at that particular station. The slope of the pressure calibration curve, based on laboratory work with a dead-weight tester, was constant over the full pressure range of the sensor and measured pressures were therefore adjusted with a linear transformation. The constant slope value for CTD 4 and 6 was 1.00000, while that for CTD 5 was 1.00467.

Linear equations were also used to adjust measured temperature and conductivity-ratio values. For temperature, the offset was determined from comparisons with a pair of precision thermistors in the field, as described above. A correction to the offset proved necessary in 1984 to compensate for an electronic drift of the resistance standards in the thermistor bridge. The slope was pre-set electronically within the probe to 1.000, although laboratory bath tests at a number of temperatures indicated a departure from this value by approximately -0.003. The slope for CTD 5, used in the outlying areas, was calibrated to a value of 0.999741. For conductivity ratio, the offset was set to zero, and slope (cell constant) was determined in the following manner. A conductivity ratio was calculated from a sampled salinity and a simultaneously measured temperature and pressure (calibrated previously). The calibration slope was then calculated as a ratio of this conductivity compared with the raw conductivity as measured by the CTD and corrected for the effects of pressure and temperature on the *in situ* dimensions of the cell. The reference measurements were made several times throughout the field trip with high-precision thermistors near the surface and with salinity (bottle) samples. The profiles during which bottles were taken are indicated in the CTD station list in the Appendix. Calibration data are tabulated in Tables 3 and 4. Note that the short-term stability of the temperature sensor is considerably poorer than the specification of the manufacturer.

The calibration tables indicate that CTD probe number 6 was used for ten casts starting with consecutive cast number 5131 on April 5. The change in probes was due to inadvertent damage to the conductivity cell on probe 4. The conductivity cell on probe 6 was, in turn, broken on the ninth cast, rendering the conductivity measurements during consecutive cast numbers 5139 and 5140 on April 6 invalid. A replacement conductivity cell was then acquired and installed on CTD probe number 4.

An estimation of the accuracy and precision of the temperature, conductivity ratio, and salinity measurements is indicated by the standard deviation of the various calibration values. The standard deviation of the temperature calibration values was 0.002°C, while that of the conductivity ratio calibration values was 0.00025. From these values, a calculated uncertainty in salinity would be approximately 0.010.

Table 3

CTD Temperature and Pressure Calibration Results

Consec. Cast Number	CTD Probe Number	Temp. Offset (°C)	Press. Offset (dbar)	Consec. Cast Number	CTD Probe Number	Temp. Offset (°C)	Press. Offset (dbar)
Main Study Area							
5100	4	.003*	1.500	5135	6	-.003	-9.100
5101	4	.003	1.425	5136	6	-.003*	-6.000
5102	4	.002*	1.350	5137	6	-.003	-8.000
5103	4	.002	1.050	5138	6	-.003	-8.700
5104	4	.001	1.500	5139	6	-.003	-6.470
5105	4	.001	0.975	5140	6	-.003	-7.800
5106	4	.000	1.425	5141	4	-.001*	0.900
5107	4	-.001	1.200	5142	4	-.001	0.500
5108	4	-.001*	1.500	5143	4	-.001	0.675
5109	4	-.002	1.200	5144	4	-.001	0.550
5110	4	-.002	0.750	5145	4	-.001	0.750
5111	4	-.002*	0.900	5146	4	-.001	0.675
5112	4	-.003	0.600	5147	4	-.001	0.850
5113	4	-.003	0.750	5148	4	-.001*	0.750
5114	4	-.004	0.600	5149	4	-.001	0.600
5115	4	-.005*	1.050	5150	4	-.001	0.750
5116	4	-.005	0.900	5151	4	-.001	0.225
5117	4	-.005	0.750	5152	4	-.001	0.450
5118	4	-.006	1.050	5153	4	-.001	0.450
5119	4	-.007	0.750	5154	4	-.001	0.350
5120	4	-.007	0.600	5155	4	-.001*	0.900
5121	4	-.007	0.600	5156	4	-.001	0.225
5122	4	-.008*	1.050	5157	4	-.001	0.300
5123	4	-.008	0.450	5158	4	-.001	0.650
5124	4	-.009	0.450	5159	4	-.001	0.000
5125	4	-.010	0.450	5160	4	-.001	0.600
5126	4	-.010	0.600	5161	4	-.001	0.750
5127	4	-.011	0.375	5162	4	-.001	0.675
5128	4	-.011	0.750	5163	4	-.001	0.638
5129	4	-.011*	0.750	5164	4	-.001	0.600
5130	4	-.012	0.600	5165	4	-.001*	1.050
5131	6	-.003*	-6.400	5166	4	-.001	0.750
5132	6	-.003	-8.800	5167	4	-.001	0.300
5133	6	-.003	-9.000	5168	4	-.001	0.900
5134	6	-.003	-9.600	5169	4	-.001	0.600

* - casts during which a temperature calibration was done.

Table 3 (continued)
CTD Temperature and Pressure Calibration Results

Consec. Cast Number	CTD Probe Number	Temp. Offset (°C)	Press. Offset (dbar)	Consec. Cast Number	CTD Probe Number	Temp. Offset (°C)	Press. Offset (dbar)
5170	4	-.001	0.150	5205	4	-.006	1.425
5171	4	-.001	1.125	5206	4	-.006	1.425
5172	4	-.001	0.750	5207	4	-.006	1.425
5173	4	-.001	0.975				
5174	4	-.006*	1.050	Outlying Study Area			
5175	4	-.006	0.900	5026	5	.0045	-1.700
5176	4	-.006	0.900	5027	5	.0045	-1.655
5177	4	-.006	1.200	5028	5	.0076	-1.770
5178	4	-.006	0.675	5029	5	.0076	-1.880
5179	4	-.006	0.900	5030	5	.0076	-1.805
5180	4	-.006*	1.200	5031	5	.0076	-1.768
5181	4	-.006	0.900	5032	5	.0076	-1.955
5182	4	-.006	0.900	5033	5	.0076	-1.993
5183	4	-.006	1.050	5041	5	.0076	-2.578
5184	4	-.006	1.200	5042	5	.0076	-2.480
5185	4	-.006	1.275	5043	5	.0076	-2.405
5186	4	-.006	1.050	5044	5	.0076	-2.368
5187	4	-.006	0.750	5045	5	.0076	-2.330
5188	4	-.006*	1.200	5046	5	.0076	-2.443
5189	4	-.006	0.900	5047	5	.0076	-2.368
5190	4	-.006	0.750	5048	5	.0076	-2.330
5191	4	-.006	1.200	5049	5	.0076	-2.405
5192	4	-.006	0.900	5050	5	.0076	-2.330
5193	4	-.006	1.500	5051	5	.0076	-2.368
5194	4	-.006*	1.350	5052	5	.0076	-2.330
5195	4	-.006	0.600	5053	5	.0076	-2.480
5196	4	-.006	1.050	5054	5	.0076	-2.480
5197	4	-.006	1.050	5055	5	.0076	-2.555
5198	4	-.006*	0.900	5056	5	.0076	-2.480
5199	4	-.006	1.200	5057	5	.0076	-2.443
5200	4	-.006	1.350	5058	5	.0076	-2.180
5201	4	-.006*	1.350	5059	5	.0076	-2.405
5202	4	-.006	1.350	5060	5	.0076	-2.405
5203	4	-.006	1.125	5061	5	.0076	-2.518
5204	4	-.006*	1.350	5062	5	.0076	-2.405

* - casts during which a temperature calibration was done.

Table 3 (continued)
CTD Temperature and Pressure Calibration Results

Consec. Cast Number	CTD Probe Number	Temp. Offset (°C)	Press. Offset (dbar)
5063	5	.0076	-2.518
5064	5	.0076	-2.180
5065	5	.0076	-2.293
5066	5	.0076	-2.518
5067	5	.0076	-2.330
5068	5	.0076	-2.180

Table 4
CTD Conductivity Calibration Results

Consec. Cast Number	CTD Probe Number	Cond. Cell S/N	Conductivity Cell Constant (Multiplicative Factor)
5100-5130	4	41671	0.999842
5131-5140	6	44974	0.999283
5141-5207	4	46731	0.994371
5026-5033, 5041-5068	5	43591	0.999763

Calibration intercomparison profiles were carried out between CTD probe number 4 used in the main study area and CTD probe number 5 used in the outlying areas by the second field party. The intercomparison profiles were conducted at station 001 on April 21 and were designated as consecutive cast numbers 5201 and 5202 for CTD 4 and 5046 and 5047 for CTD 5 respectively. The two probes were deployed simultaneously in both instances and were separated horizontally by about 40 metres. A comparison of final calibrated temperature and salinity values from these casts are shown in Tables 5 and 6. The temperature profiles compare well in the first 100 metres with an average ΔT of -.001°C (standard deviation S.D. = .005°C) with the first cast set and an average ΔT of .008°C (S.D. = .008°C) with the second cast set. The next 50 metres depth, however, displays a greater discrepancy between the two probes, resulting in overall average ΔT's of .007°C (S.D. = .018°C) and .014°C (S.D. = .012°C) for the two sets of casts. The salinity differences were virtually the same in both cast sets, with average ΔS's in the top 100 metres of .028 (S.D. = .017) and in the total 150 metres of .033 (S.D. = .019). It appears that since the majority of the temperature and salinity differences are of the same sign, a consistent error in pressure in one of the probes could account for the disparities. While the fact that the differences are greatest in the regions of the thermocline and halocline reinforces this possibility, a pressure correction of about three to five metres would be necessary, and this is not plausible. The differences between the probes must be attributed to cumulative effects of sensor calibration errors on both probes, and spatial variations in profiles and water properties between the two sites.

Table 5

Comparison of Temperature and Salinity Values From First Intercomparison Test

Pressure	Temperature (°C)			Salinity		
(dbar)	CTD #4	CTD #5	ΔT	CTD #4	CTD #5	ΔS
5	-1.760	-1.758	.002	32.186	32.208	.022
10	-1.759	-1.759	.000	32.185	32.209	.024
15	-1.758	-1.758	.000	32.185	32.205	.020
20	-1.756	-1.757	-.001	32.190	32.206	.016
30	-1.741	-1.741	.000	32.238	32.245	.007
40	-1.710	-1.718	-.008	32.310	32.330	.020
50	-1.636	-1.644	-.008	32.396	32.412	.016
60	-1.558	-1.556	.002	32.524	32.550	.026
70	-1.562	-1.561	.001	32.632	32.660	.028
80	-1.500	-1.494	.006	32.753	32.823	.070
90	-1.485	-1.485	.000	32.902	32.955	.053
100	-1.468	-1.477	-.009	33.017	33.052	.035
110	-1.411	-1.356	.055	33.114	33.166	.052
120	-1.357	-1.309	.048	33.240	33.318	.078
130	-1.127	-1.108	.019	33.514	33.576	.062
140	-0.960	-0.957	.003	33.755	33.785	.030
150	-0.855	-0.848	.007	33.873	33.910	.037

Table 6

Comparison of Temperature and Salinity Values From Second Intercomparison Test

Pressure	Temperature (°C)			Salinity		
(dbar)	CTD #4	CTD #5	ΔT	CTD #4	CTD #5	ΔS
10	-1.760	-1.757	.003	32.188	32.203	.015
15	-1.761	-1.756	.005	32.190	32.202	.012
20	-1.759	-1.755	.004	32.188	32.204	.016
30	-1.742	-1.736	.006	32.194	32.269	.075
40	-1.713	-1.702	.011	32.309	32.334	.025
50	-1.630	-1.601	.029	32.410	32.438	.028
60	-1.560	-1.556	.004	32.553	32.575	.022
70	-1.568	-1.562	.006	32.645	32.667	.022
80	-1.500	-1.498	.002	32.758	32.792	.034
90	-1.492	-1.486	.006	32.882	32.906	.024
100	-1.477	-1.467	.010	33.000	33.028	.028
110	-1.422	-1.390	.032	33.112	33.146	.034
120	-1.337	-1.312	.025	33.249	33.298	.049
130	-1.065	-1.037	.028	33.606	33.657	.051
140	-0.954	-0.946	.009	33.760	33.791	.031
150	-0.885	-0.846	.039	33.839	33.905	.066

The temperature results from the intercomparison tests showed CTD probes 4 and 5 generally agreeing to within .010°C with CTD 5 usually reading higher. The maximum difference between the two was .055°C at 110 metres during the first intercomparison. The salinity results showed general agreement between the two probes to within .030 with the higher readings coming from CTD 4.

4. DATA PROCESSING

The first stage in processing the CTD data was the translation of the information from the original audio cassette tape onto a computer-compatible nine-track magnetic tape. The data were then run through a series of programs for editing and calibration. The principal despiking procedure was a first-difference filter on each parameter with thresholds for successive scans set at 0.001 for conductivity ratio, 0.1°C for temperature, and 1.0 decibar for pressure. The temperature and conductivity sensors on the CTD probe have different response times to variations within the water column. To compensate for this effect, a response-matching algorithm was applied to the data (Perkin and Lewis, 1982). Since the rate of change of the variations, and hence the algorithm, depend on the speed with which the probe moves through the water, the fall speed of the probe was calculated as a moving average over 25 successive scans. In addition, those data points with fall speeds of 0.5 metres per second or less were discarded to avoid erroneous values resulting from self-heating effects of the temperature sensor and from inadequate flushing of the conductivity cell. A correction to the conductivity ratio - to compensate for changes resulting from geometrical distortions of the conductivity cell due to the differing ambient pressure and temperature during the CTD profiling (Bennett, 1976) was applied. After calibrations and corrections had been applied, profiles displaying each data scan were plotted in a large-scale format for close visual scrutiny. Any remaining data spikes or inconsistencies were edited subjectively and the profiles were re-plotted for final checking.

The reported values of salinity were calculated using the Practical Salinity Scale 1978 (Lewis, 1981). The freezing-point temperatures at one atmosphere pressure were calculated according to the UNESCO definition (Millero, 1978). Density has been presented as gamma (γ), from the relationship,

$$\gamma = (\text{density} - 1000)\ (\text{kg/m}^3)$$

computed at one atmosphere pressure. The plots in the Appendix are erroneously labelled as σ_t, which is the old, disused label for this parameter. The dynamic height anomaly was calculated as the pressure integral of the specific volume anomaly (Millero et al., 1980) from the surface. The values were produced in units of dynamic metres which is a measure of geopotential difference (1 dynamic metre = 10 m^2/s^2 = 10 J/kg). Sound speed was calculated using an algorithm by Chen and Millero (1977).

The top 20 metres of data from consecutive cast number 5125 (station 010, April 4, 1984) were inadvertently lost while in the field due to over-recording of these data by readings from a subsequent cast. In order to retrieve some of the lost values, the Hewlett-Packard data tape (which still has all the data) was read and values from every metre of depth were listed. Included in this list were temperature, salinity, sigma-t, dynamic height, and conductivity ratio.

5. DATA PRESENTATION

The calibrated and corrected CTD data are presented in the Appendices. The plots display vertical profiles of temperature, salinity, and sigma-t. Original data have been subsampled to enable plotting at the resolution limit of the plotter. Also plotted are discrete values of surface pressure freezing temperatures, indicated by "+" symbols. The pressure at the seafloor is denoted by a "∇" symbol below each of the T, S, and σ_t (for simplicity, σ_t has been labelled σ on these plots) traces. The data listing associated with a profile may be found in Appendix 2. The heading information includes the cruise number, area, station identification, experiment (or consecutive) number, date, latitude and longitude of the station, water depth, and ice thickness. The calibrated, corrected, and derived values of temperature, sigma-t, dynamic height anomaly, and sound speed are listed at the lowest acceptable pressure, then at regular intervals. The data values of the last 20 decibars of each data set are listed at 1 decibar intervals. Each listed value is linearly interpolated to represent a value corresponding to the exact designated pressure. On the temperature versus salinity diagram found in Figure 1 lines of constant sigma-t are drawn as an aid to interpreting the plot. As before, discrete values of surface pressure freezing temperatures are designated by "+" symbols. the "Δ" symbols signify the specific pressures of 50, 100, 150, 200, 300, and 400 decibars.

An analysis and interpretation of these CTD data will appear in a separate technical report.

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APPENDICES

1. CTD INDEX, AND DATA PLOTS
2. CTD LISTINGS

STATION NAME - CONSECUTIVE CAST NUMBER INDEX

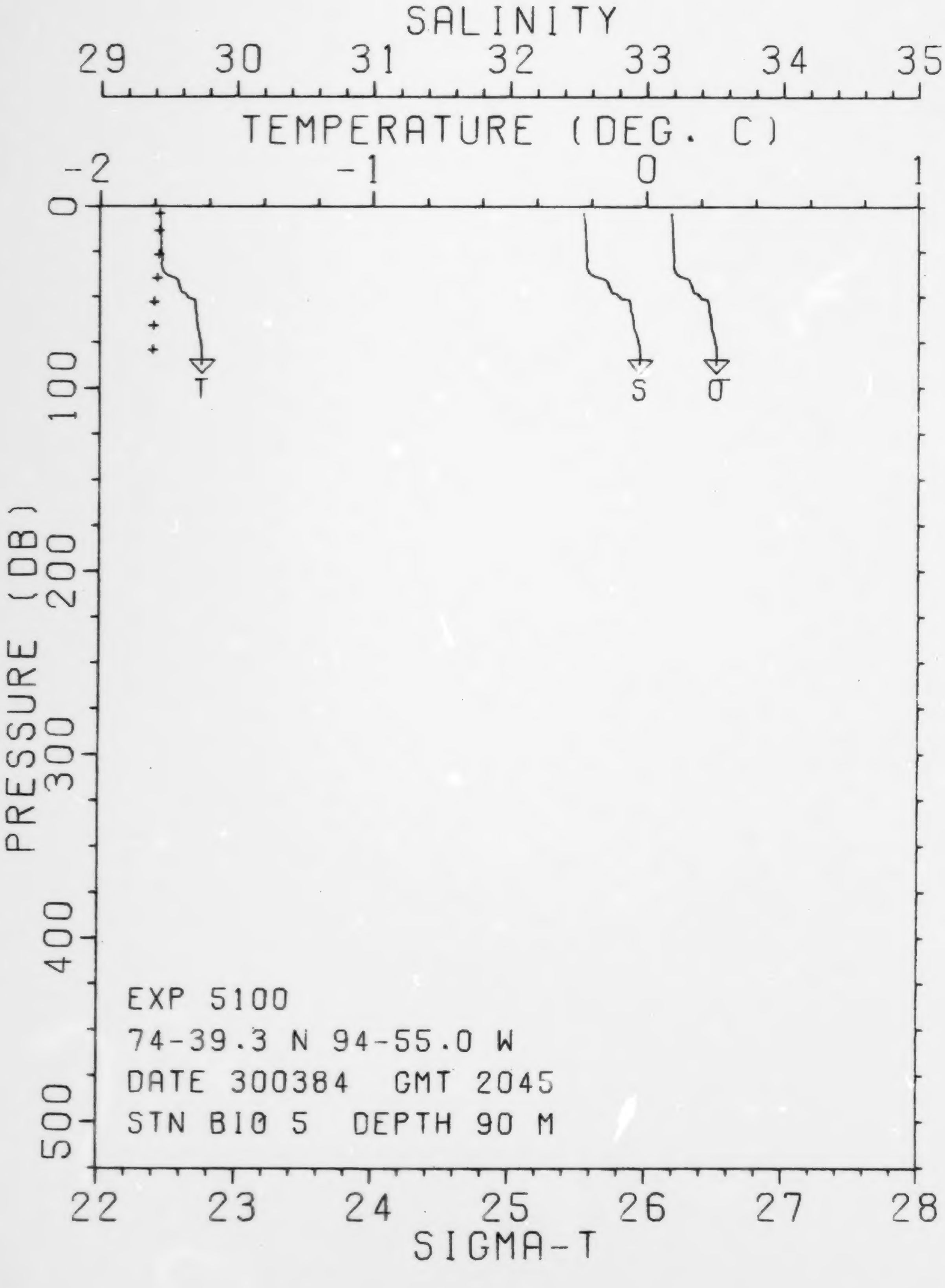
The index is ordered numerically by station number, or alphabetically for those stations preceded by a letter. The list gives the corresponding experiment number, date of occupation, and geographical area for each station. The following symbols appear in the comments column: S = salinity calibration sample obtained; T = temperature calibration performed; P = pressure checked performed; I = CTD probe intercomparison station; noise = some noise spikes exist in pre-edited raw data. Unless otherwise indicated, CTD probe #4 was used for the 5100-5202 and BIO Series casts while CTD probe #5 was used for the 5026-5068 and "lettered" series.

Station	Consecutive Cast No.	Date (GMT)	Geographical Area	Comments
1	5201	21 April	Viscount Melville	S, P, I
	5202	21 April	Sound.	P,I
	5046	21 April	"	P,I
	5047	21 April	"	P,I
2	5203	21 April	"	P
3	5200	21 April	"	P
4	5199	21 April	"	P
5	5198	21 April	"	P; noise spikes
6	5128	4 April	"	S,P
7	5122	4 April	"	T,P
8	5123	4 April	"	P
9	5124	4 April	"	P
10	5125	4 April	"	P
11	5126	4 April	"	P
12	5127	4 April	"	P
13	5115	3 April	"	T,P
14	5116	3 April	"	P
15	5117	3 April	"	P
16	5118	3 April	"	P
17	5119	3 April	"	P
18	5120	3 April	"	P
19	5121	3 April	"	S,P
20	5111	2 April	"	T,P
21	5112	2 April	"	P
23	5113	2 April	"	P
24	5114	2 April	"	S,P
25	5108	1 April	"	T,P
26	5109	1 April	"	P
27	5110	1 April	"	P
	5139	6 April	"	P; CTD 6, cond. cell broken
28	5140	6 April	"	P; CTD 6, cond. cell broken
	5162	10 April	"	P
29	5161	10 April	"	P
30	5107	31 March	Barrow Strait	S,P
31	5106	31 March	"	P
32	5135	5 April	"	P

Station	Consecutive Cast No.	Date (GMT)	Geographical Area	Comments
33	5134	5 April	Barrow Strait	P; CTD 6
34	5133	5 April	"	P; CTD 6
35	5132	5 April	"	P; CTD 6
37	5131	5 April	"	T,P; CTD 6
	5138	6 April	"	P; CTD 6
38	5130	5 April	"	P; cond. cell broken
	5137	6 April	"	P; CTD 6
39	5129	5 April	"	T,P; CTD 6, cond. cell suspect
	5136	6 April	"	T,P
41	5105	31 March	"	P
42	5205	30 April	"	P
	5206	30 April	"	P
	5207	30 April	"	S,P
43	5104	31 March	"	P
44	5103	31 March	"	P
45	5102	31 March	"	T,P
46	5204	30 April	"	T,P
50	5147	8 April	"	S,P
51	5146	8 April	"	P
52	5145	8 April	"	P
53	5144	8 April	"	P
54	5143	8 April	"	P
55	5142	8 April	"	P
56	5141	8 April	"	T,P; noise
57	5154	9 April	"	S,P
58	5153	9 April	"	P
59	5152	9 April	"	P
61	5151	9 April	"	P
62	5150	9 April	"	P; noise
63	5149	9 April	"	P
64	5148	9 April	"	T,P
70	5184	14 April	McDougall Sound	P
71	5183	14 April	"	P; noise
72	5182	14 April	"	P; noise
73	5181	14 April	"	P
74	5180	14 April	"	T,P
81	5179	13 April	Peel Sound	S,P
82	5178	13 April	"	P
83	5177	13 April	"	P
84	5176	13 April	"	P
85	5175	13 April	"	P
86	5174	13 April	"	T,P; noise

Station	Consecutive Cast No.	Date (GMT)	Geographical Area	Comments
91	5160	10 April	Wellington Channel	S,P
92	5159	10 April	"	P
93	5158	10 April	"	P
94	5157	10 April	"	P
95	5156	10 April	"	P
96	5155	10 April	"	T,P
121	5170	12 April	"	P
122	5169	12 April	"	P
123	5168	12 April	"	P
124	5167	12 April	"	P
125	5166	12 April	"	P
126	5165	12 April	"	T,P
140	5172	16 April	"	P
141	5171	16 April	"	P
143	5194	16 April	"	T,P; noise
144	5195	16 April	"	P
145	5196	16 April	"	P
146	5197	16 April	"	S,P;
160	5193	15 April	Penny Strait	P
161	5192	15 April	"	P
162	5191	15 April	"	P
163	5190	15 April	"	P
164	5189	15 April	"	P; noise
165	5188	15 April	"	T,P; noise
166	5065	24 April	"	S,P
167	5064	24 April	"	S,P
170	5185	14 April	Crozier, Pullen Straits	P
171	5186	14 April		P
172	5187	14 April	"	S,P
173	5173	12 April	"	S,P
181	5057	22 April	Prince Regent Inlet	P
182	5056	22 April		S,P
185	5054	22 April	"	S,P
186	5053	22 April	"	P
187	5055	22 April	"	P
191	5059	23 April	Lancaster Sound	T,S,P
192	5060	23 April	"	S,P
195	5062	23 April	"	P
196	5058	22 April	"	P
197	5061	23 April	"	P

Station	Consecutive Cast No.	Date (GMT)	Geographical Area	Comments
245	5051	22 April	Viscount Melville	P
248	5050	21 April	Sound	S,P
250	5052	22 April	"	P
256	5049	21 April	"	P
276	5048	21 April	"	P
B 07	5043	20 April	M'Clure Strait	S,P
B 08	5044	20 April	"	S,P
B 09	5045	20 April	"	P
			"	
BIO 3	5163	10 April	Barrow Strait	P
BIO 5	5100	30 March	"	T,S,P
	5101	30 March	"	P
	5164	10 April	"	P
E 01	5030	15 April	Maclean Strait	P
E 02	5031	15 April	"	S,P
E 03	5063	24 April	"	P
E 04	5032	15 April	"	S,P
E 05	5033	15 April	"	P
L 01	5026	14 April	Hazen Strait	T,P
L 02	5027	14 April	"	P
L 03	5028	14 April	"	S,P
L 06	5029	14 April	"	S,P
M 01	5041	20 April	M'Clure Strait	S,P
M 02	5042	20 April	"	P
PS 1	5066	24 April	Penny Strait	S,P
PS 2	5067	24 April	"	S,P
	5068	24 April	"	P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PRESSURE (DB)
0
100
200
300
400
500
T
S
σ
EXP 5100
74-39.3 N 94-55.0 W
DATE 300384 GMT 2045
STN BIO 5 DEPTH 90 M
22
23
24
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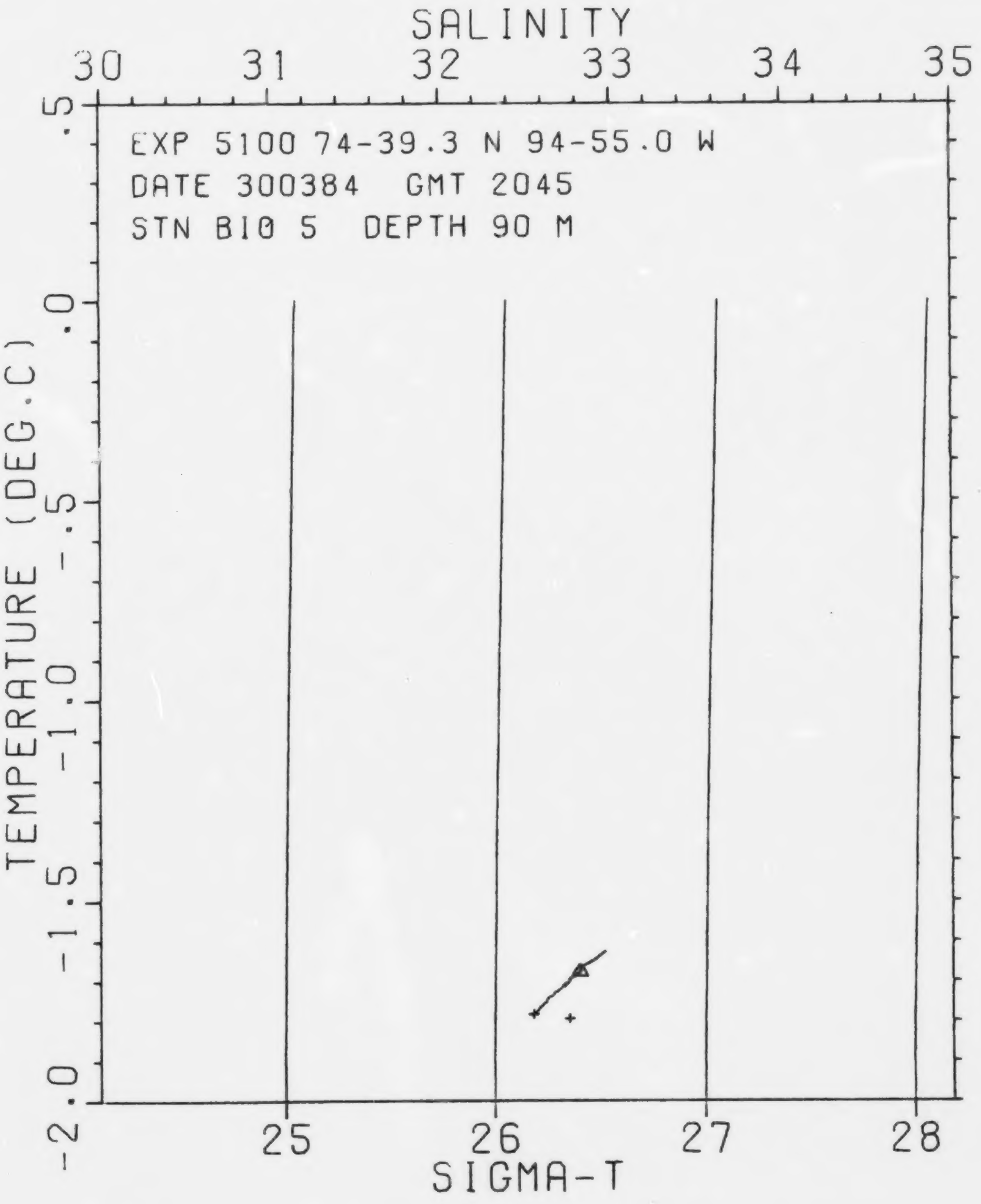
SIGMA-T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DATE 300384 GMT 2045
STN BIO 5 DEPTH 90 M
TEMPERATURE (DEG.C)
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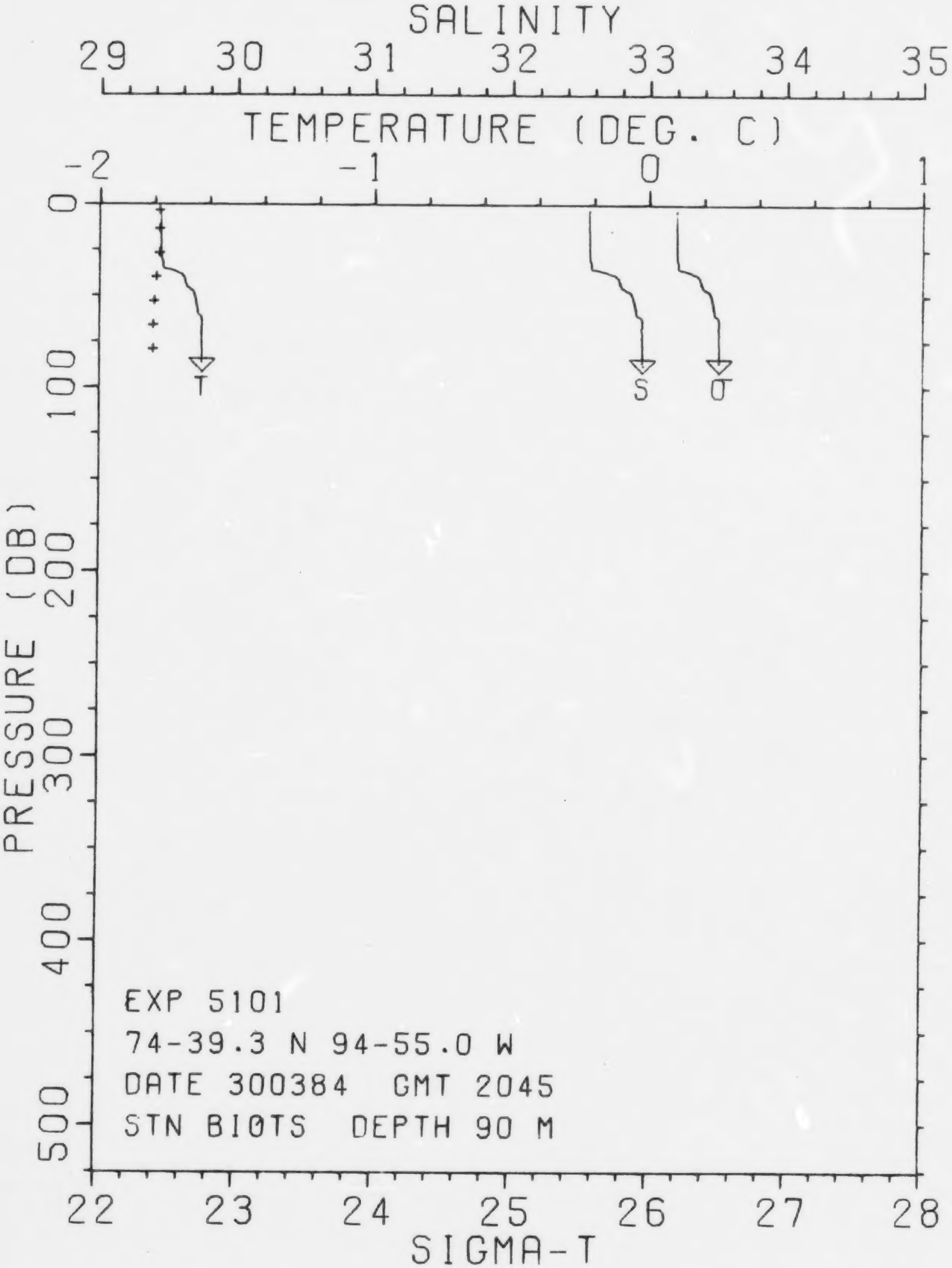
SIGMA-T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PRESSURE (DB)
0
100
200
300
400
500
T
S
σ
EXP 5101
74-39.3 N 94-55.0 W
DATE 300384 GMT 2045
STN BIOTS DEPTH 90 M
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23
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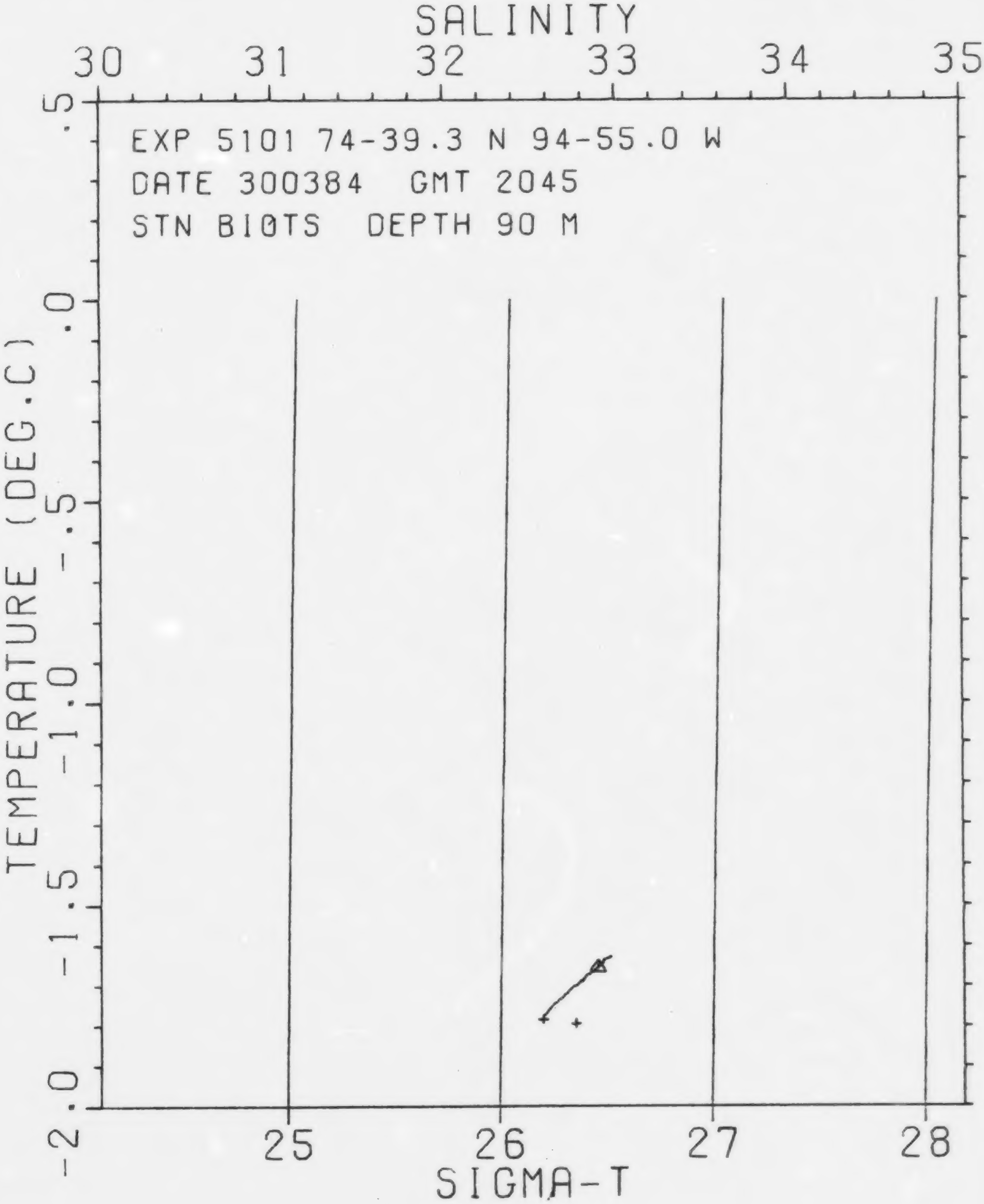
SIGMA-T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EXP 5101 74-39.3 N 94-55.0 W
DATE 300384 GMT 2045
STN BI0TS DEPTH 90 M
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TEMPERATURE (DEG.C)
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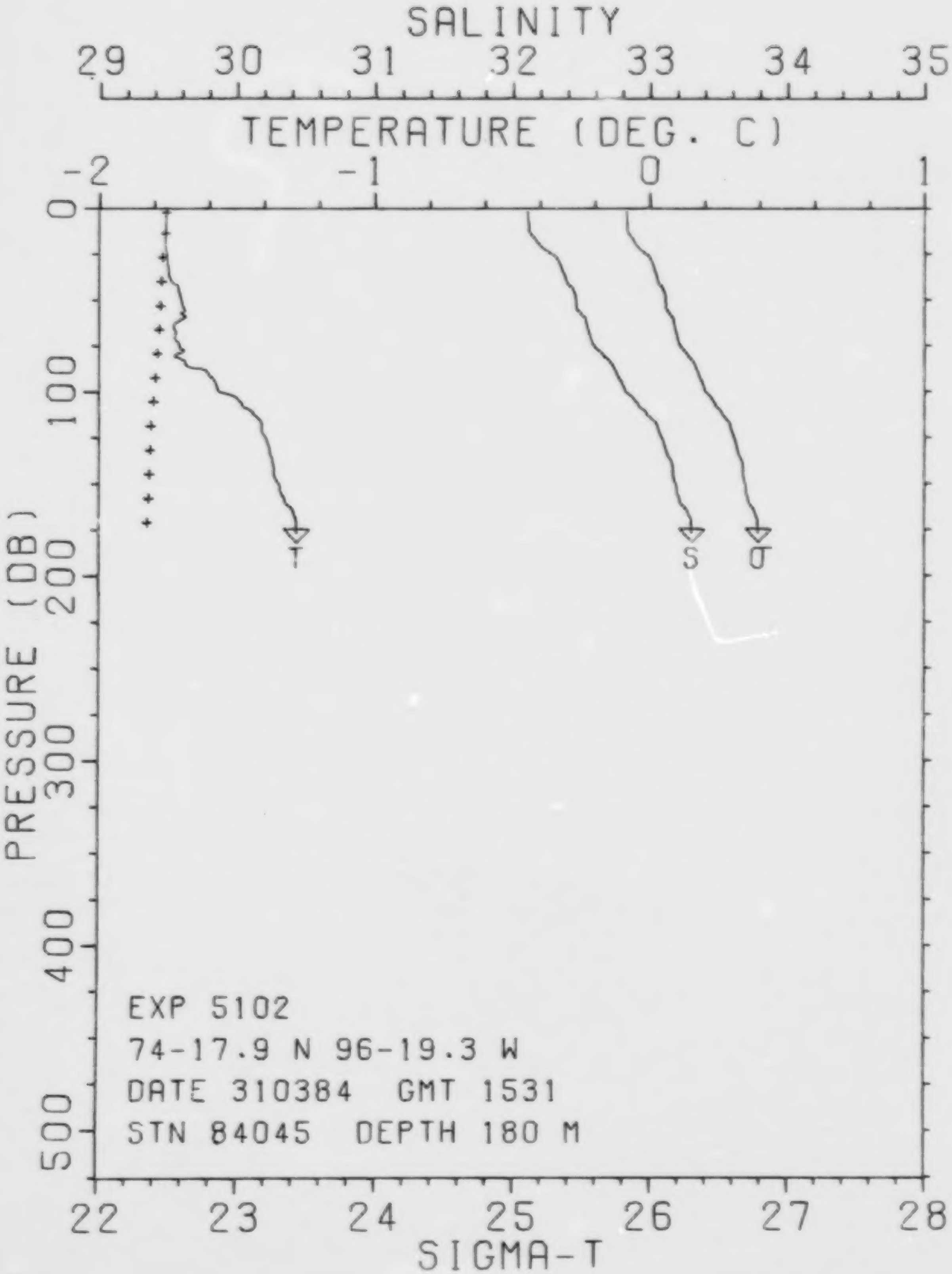
SIGMA-T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PRESSURE (DB)
0
100
200
300
400
500
T
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EXP 5102
74-17.9 N 96-19.3 W
DATE 310384 GMT 1531
STN 84045 DEPTH 180 M
22
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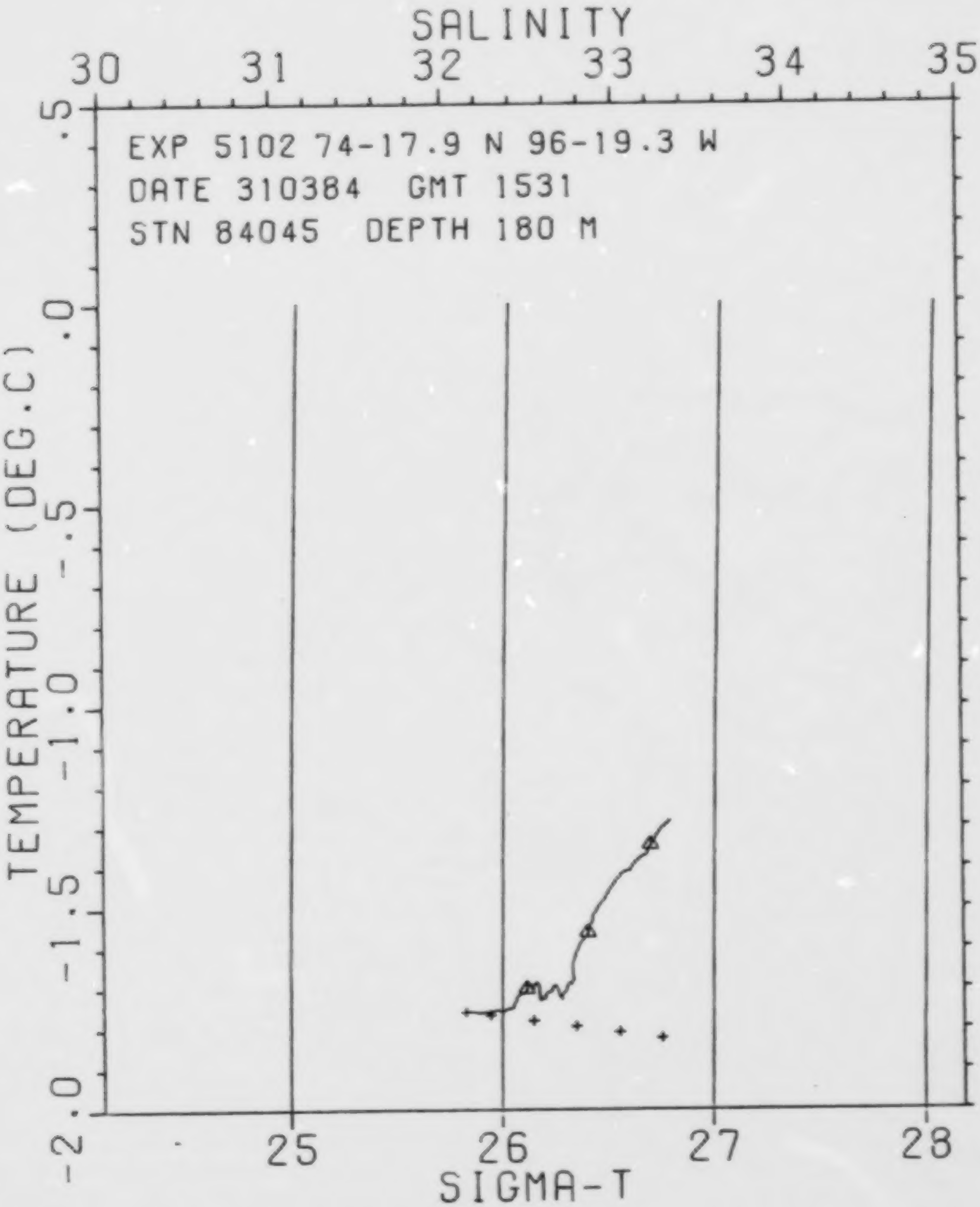
SIGMA-T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EXP 5102 74-17.9 N 96-19.3 W
DATE 310384 GMT 1531
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TEMPERATURE (DEG.C)
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-1.5
-2.0
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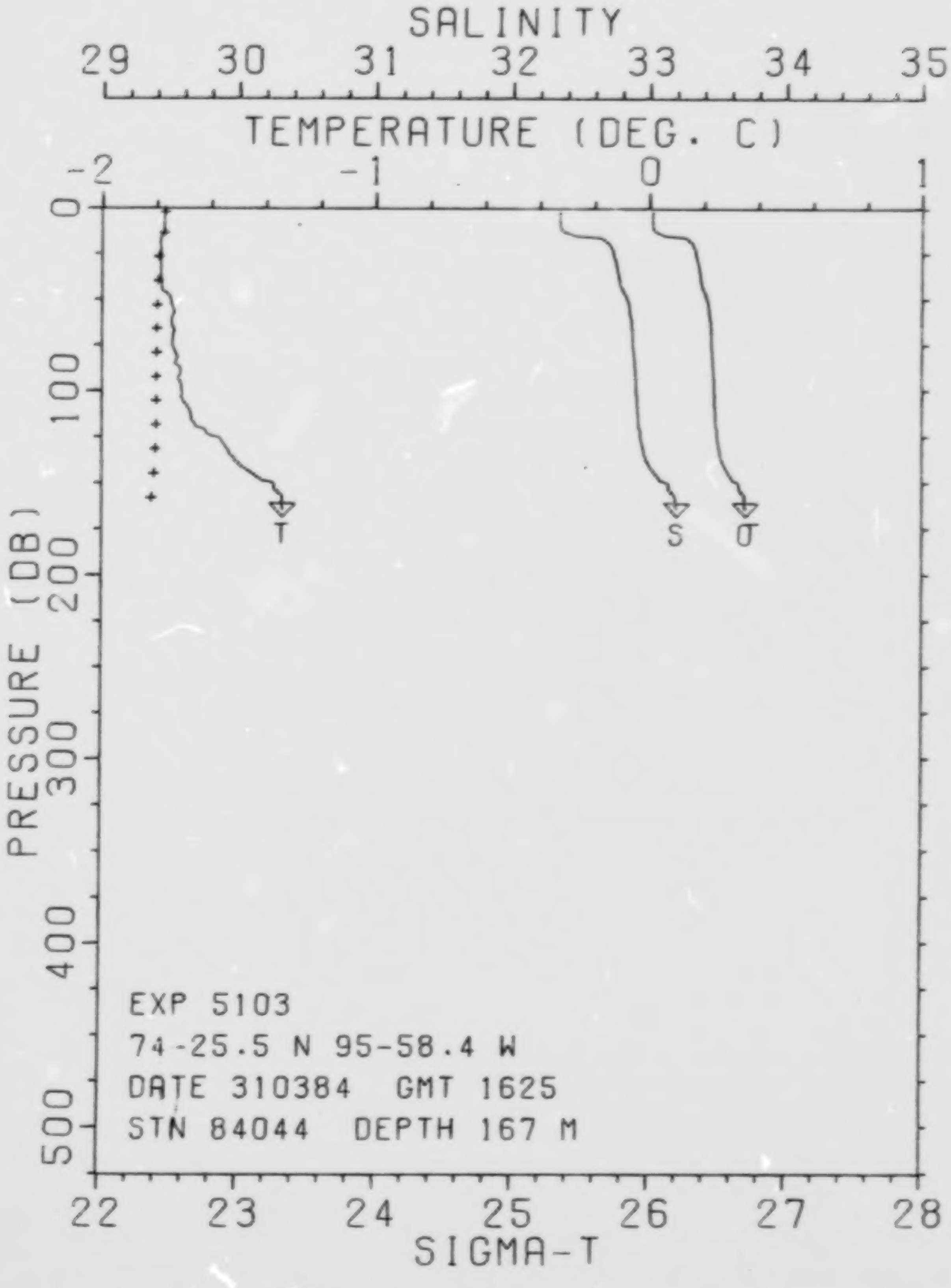
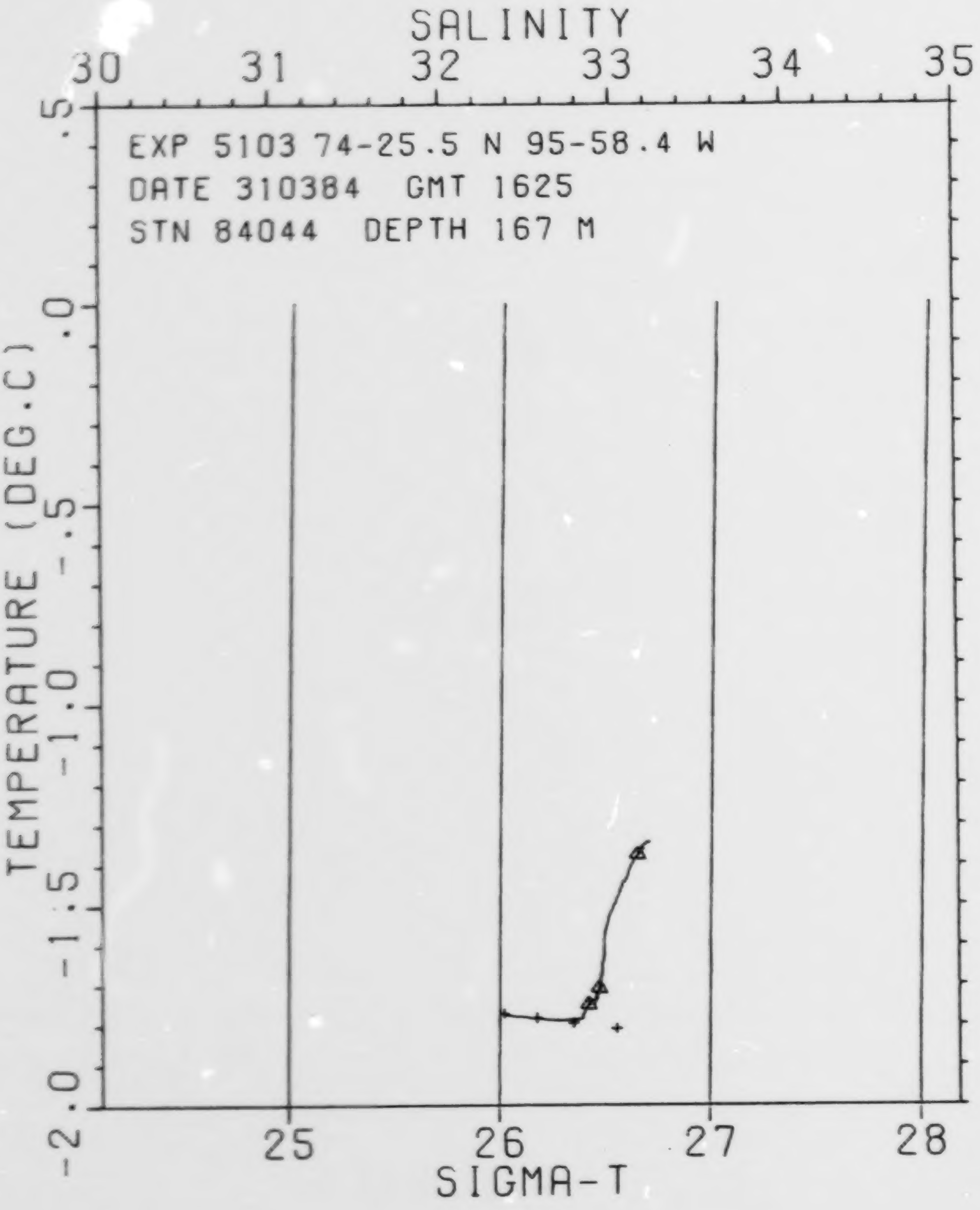
SIGMA-T



EXP 5103
74-25.5 N 95-58.4 W
DATE 310384 GMT 1625
STN 84044 DEPTH 167 M


SALINITY
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33
34
35
EXP 5103 74-25.5 N 95-58.4 W
DATE 310384 GMT 1625
STN 84044 DEPTH 167 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
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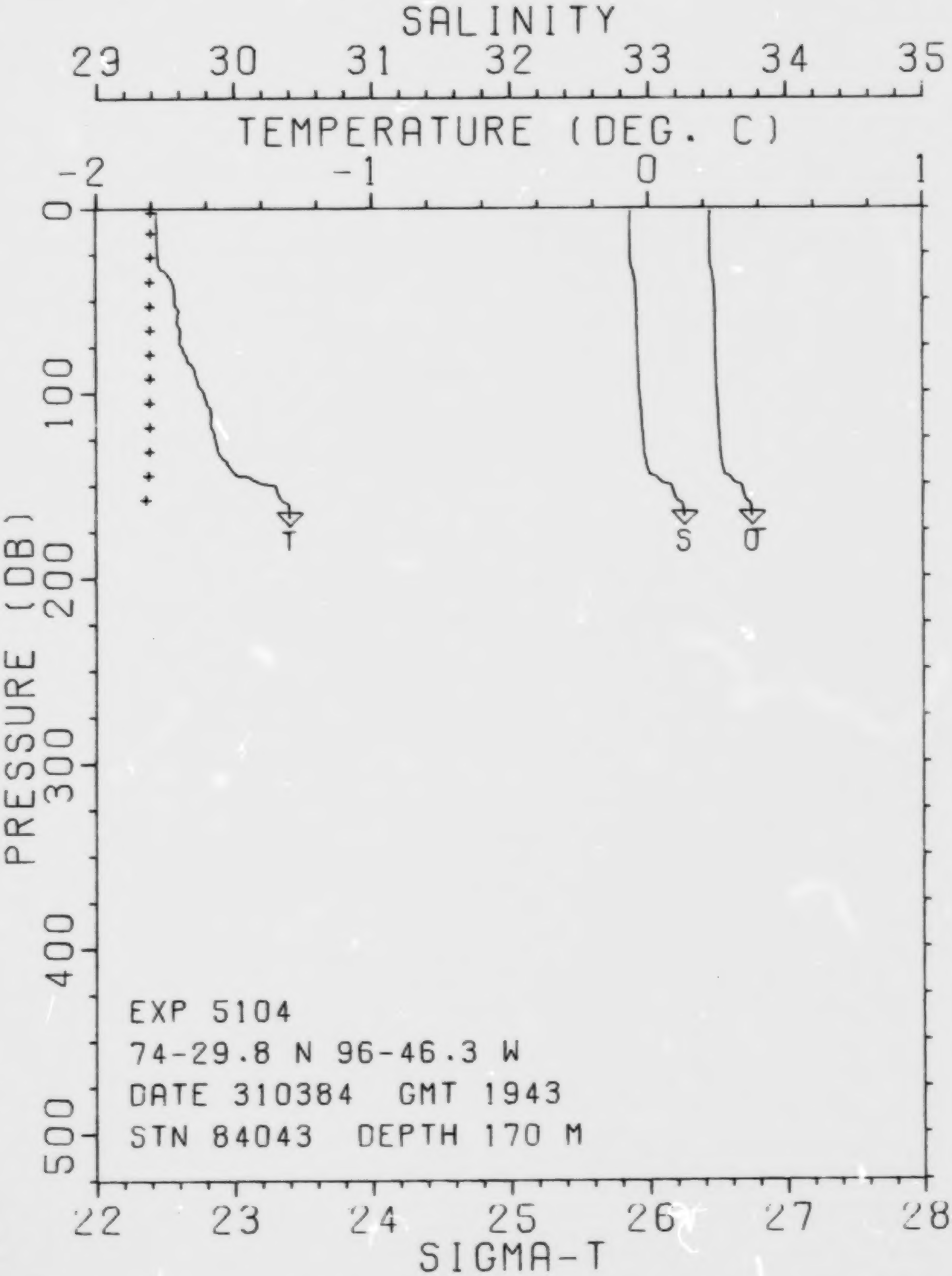
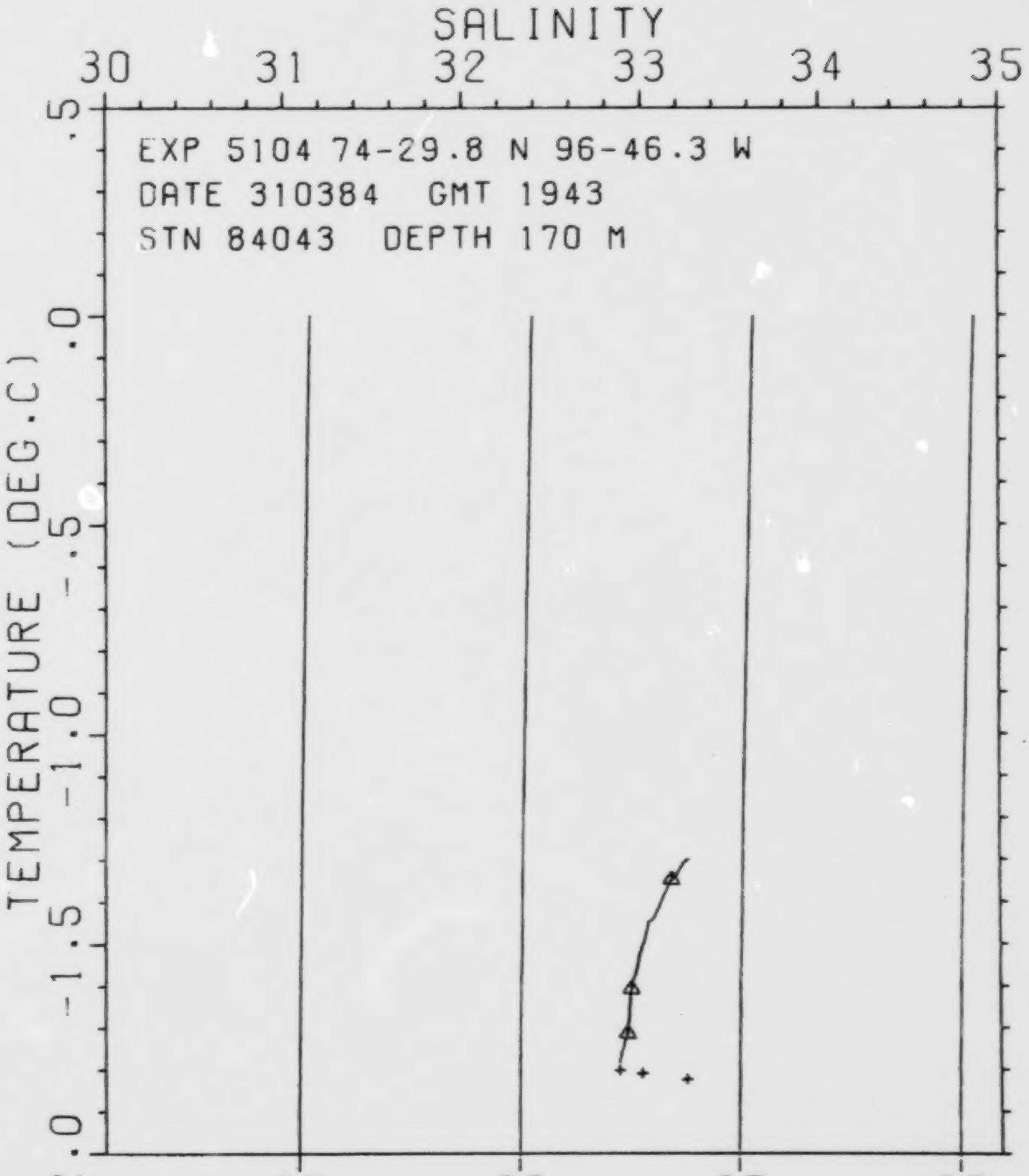
SIGMA-T



EXP 5104
74-29.8 N 96-46.3 W
DATE 310384 GMT 1943
STN 84043 DEPTH 170 M


SALINITY
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EXP 5104 74-29.8 N 96-46.3 W
DATE 310384 GMT 1943
STN 84043 DEPTH 170 M
TEMPERATURE (DEG.C)
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.0
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-1.0
-1.5
-2.0
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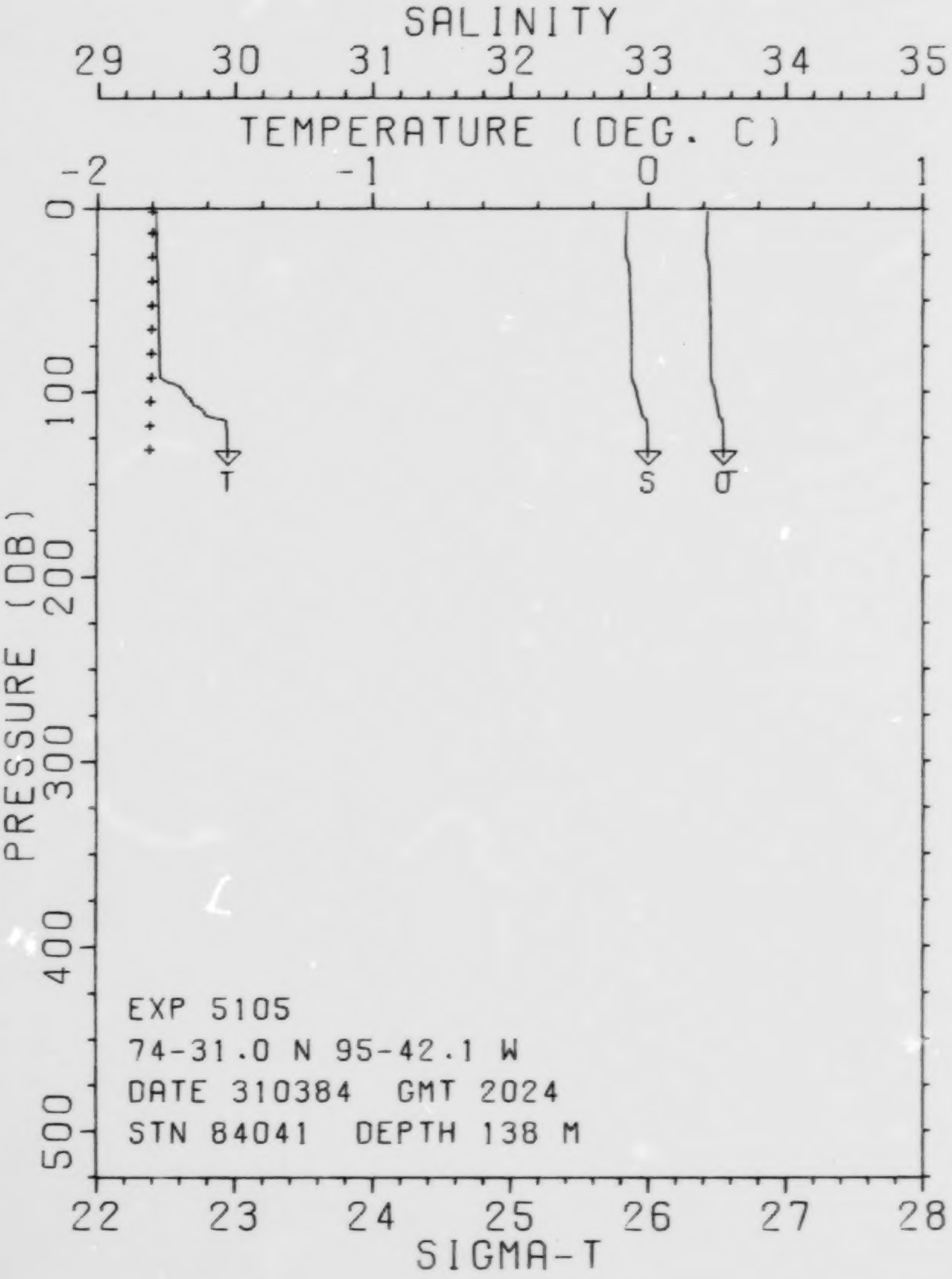
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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100
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EXP 5105
74-31.0 N 95-42.1 W
DATE 310384 GMT 2024
STN 84041 DEPTH 138 M
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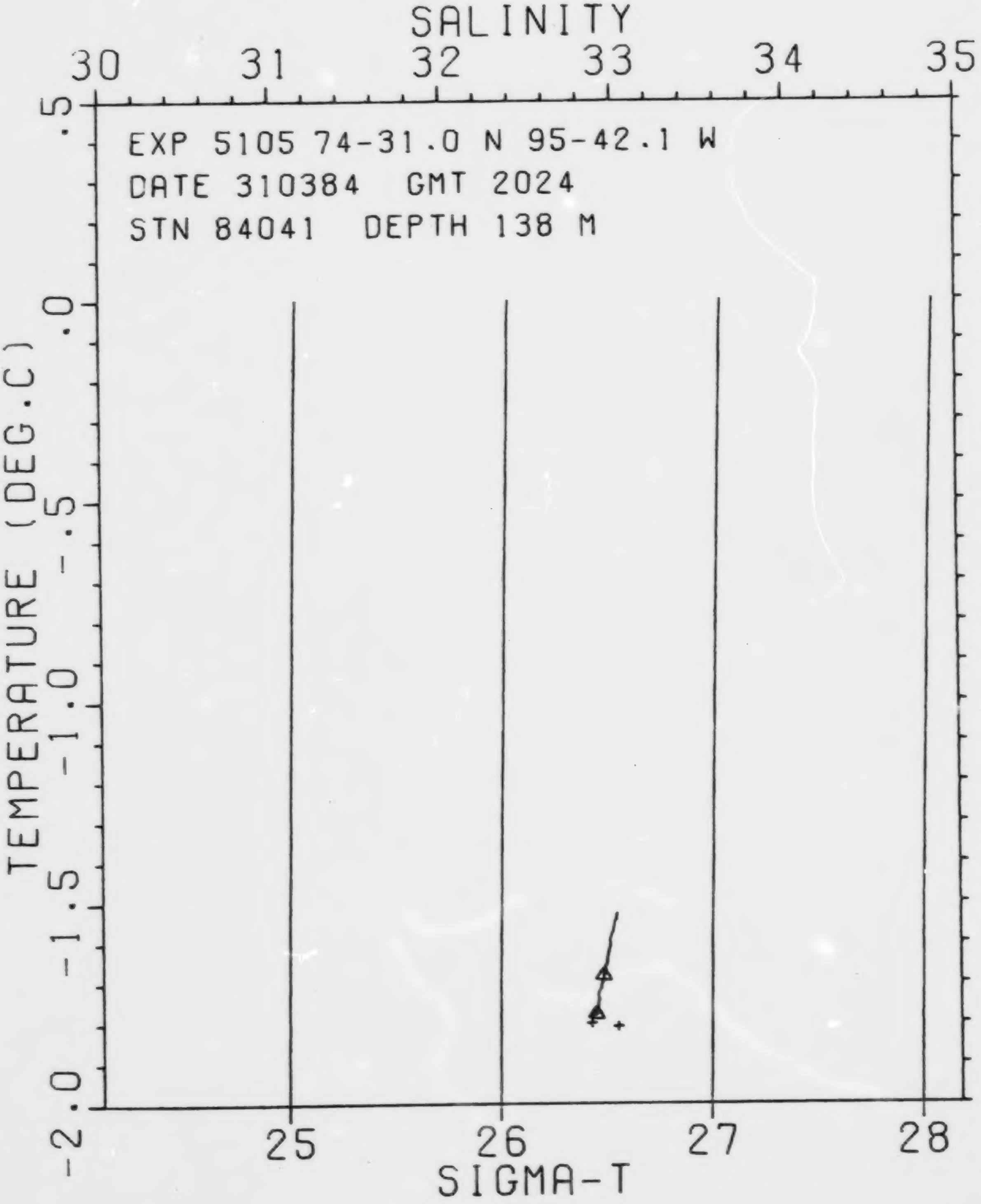
SIGMA-T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EXP 5105 74-31.0 N 95-42.1 W
DATE 310384 GMT 2024
STN 84041 DEPTH 138 M
TEMPERATURE (DEG.C)
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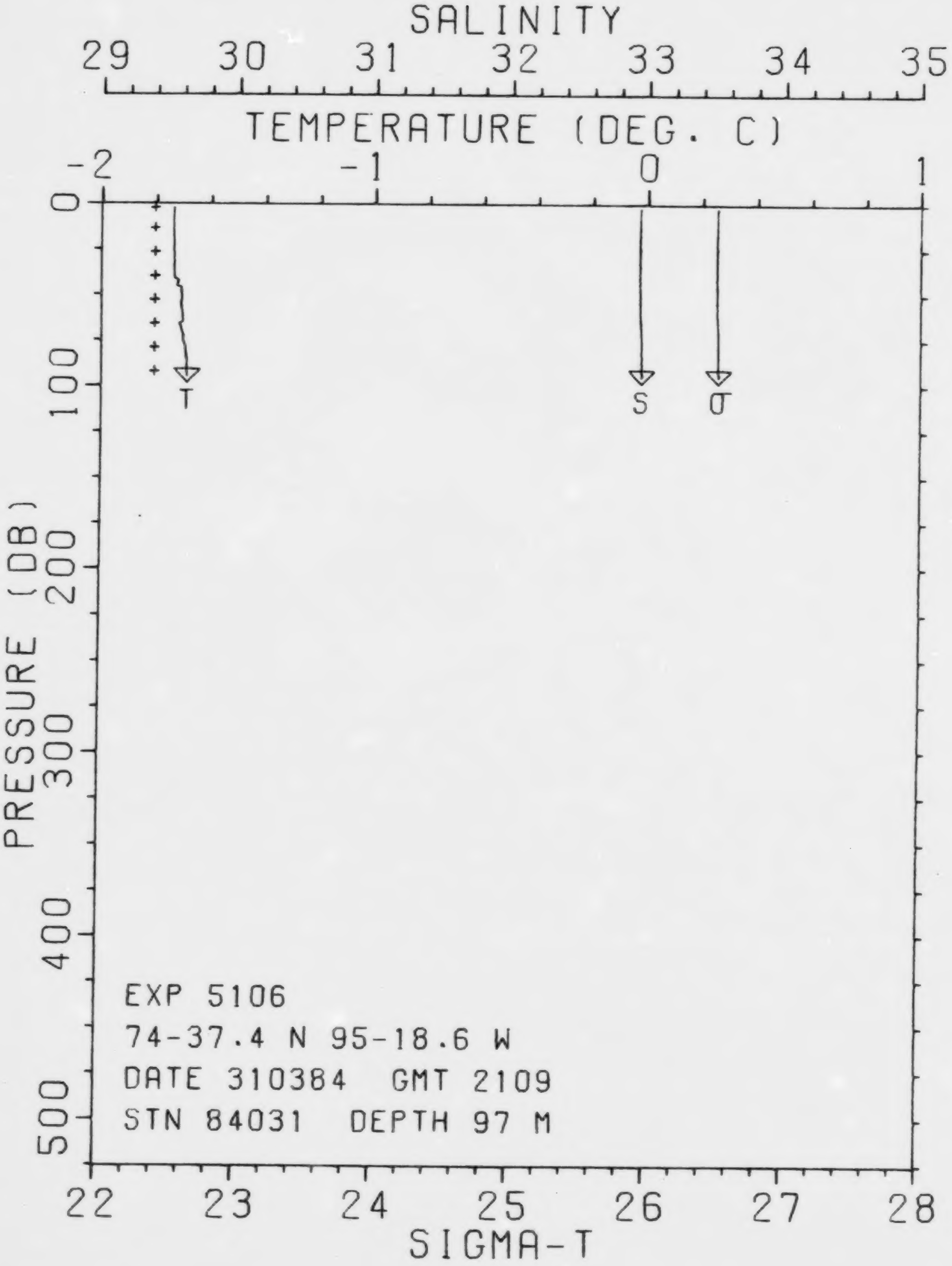
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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100
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EXP 5106
74-37.4 N 95-18.6 W
DATE 310384 GMT 2109
STN 84031 DEPTH 97 M
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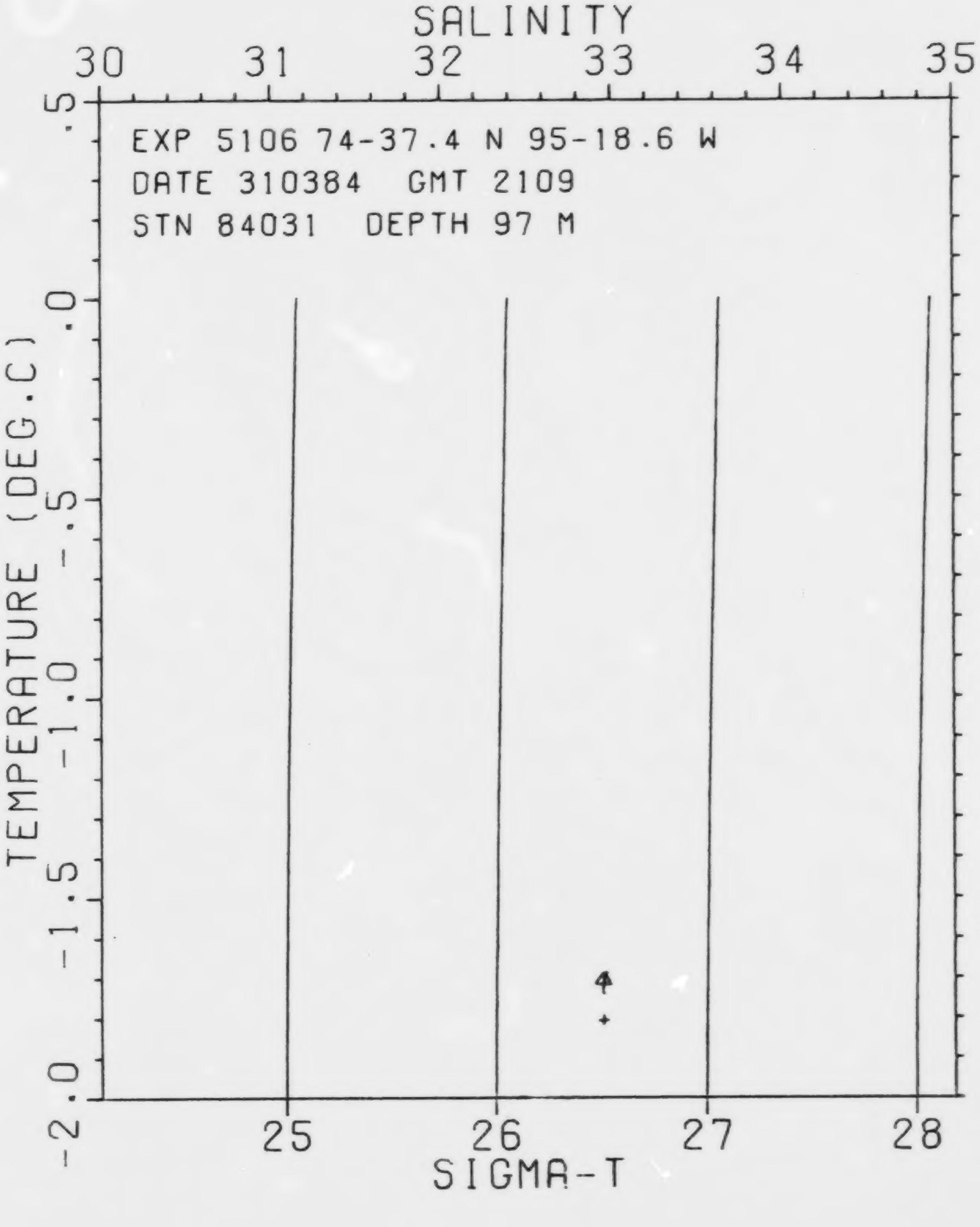
SIGMA-T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35
EXP 5106 74-37.4 N 95-18.6 W
DATE 310384 GMT 2109
STN 84031 DEPTH 97 M
TEMPERATURE (DEG.C)
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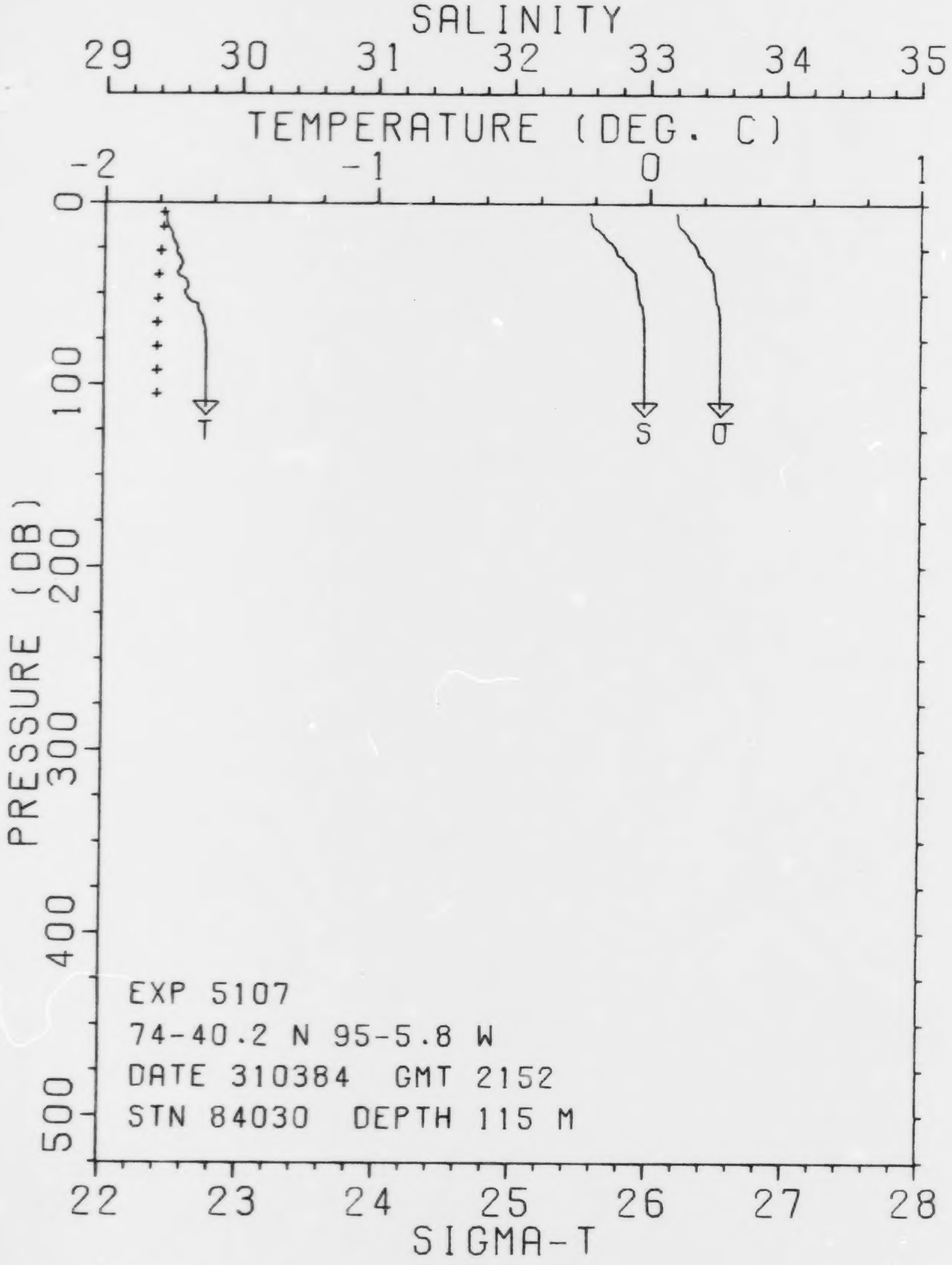
SIGMA-T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PRESSURE (DB)
0
100
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EXP 5107
74-40.2 N 95-5.8 W
DATE 310384 GMT 2152
STN 84030 DEPTH 115 M
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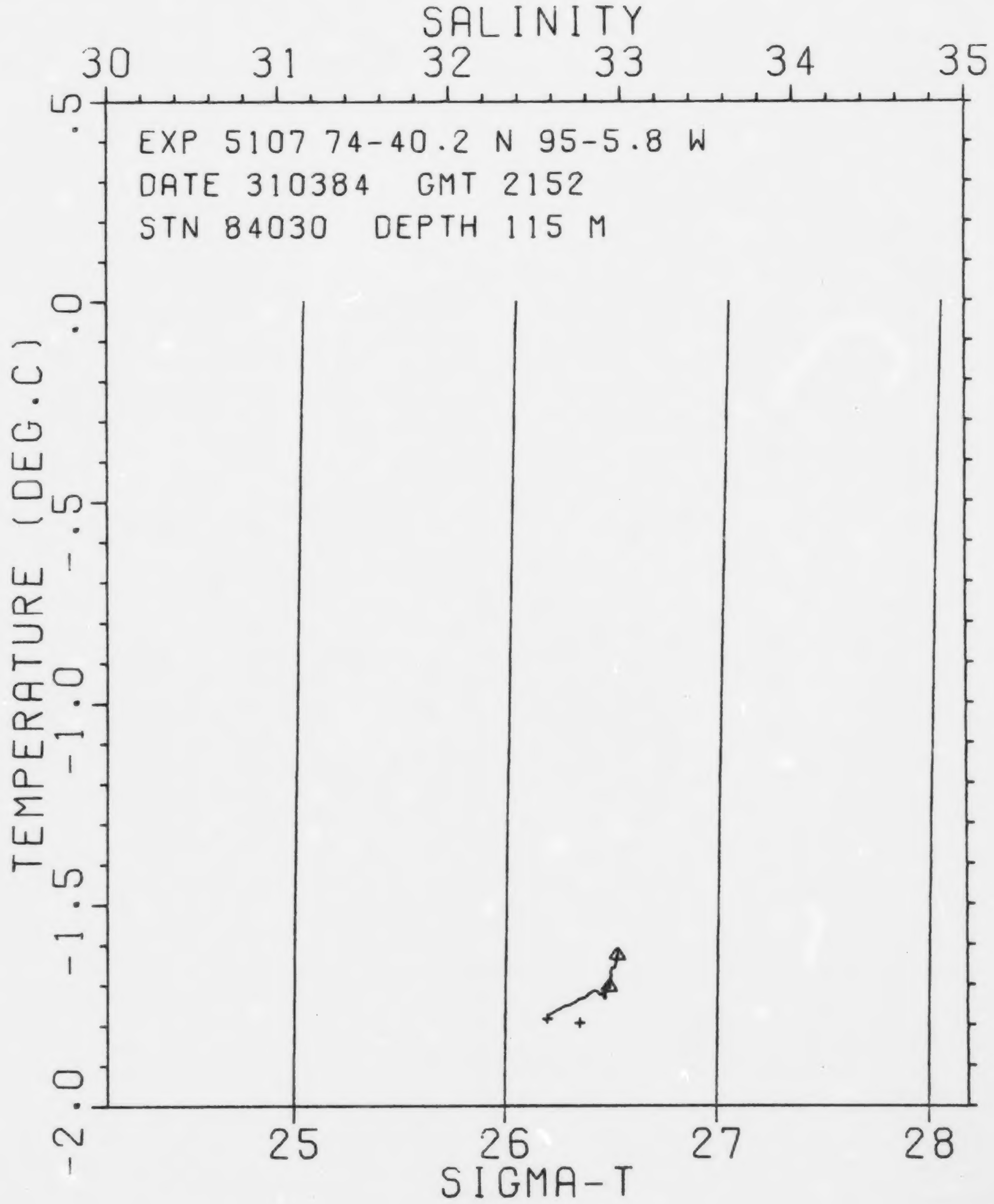
SIGMA-T


SALINITY
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34
35
EXP 5107 74-40.2 N 95-5.8 W
DATE 310384 GMT 2152
STN 84030 DEPTH 115 M
TEMPERATURE (DEG.C)
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-1.0
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-2.0
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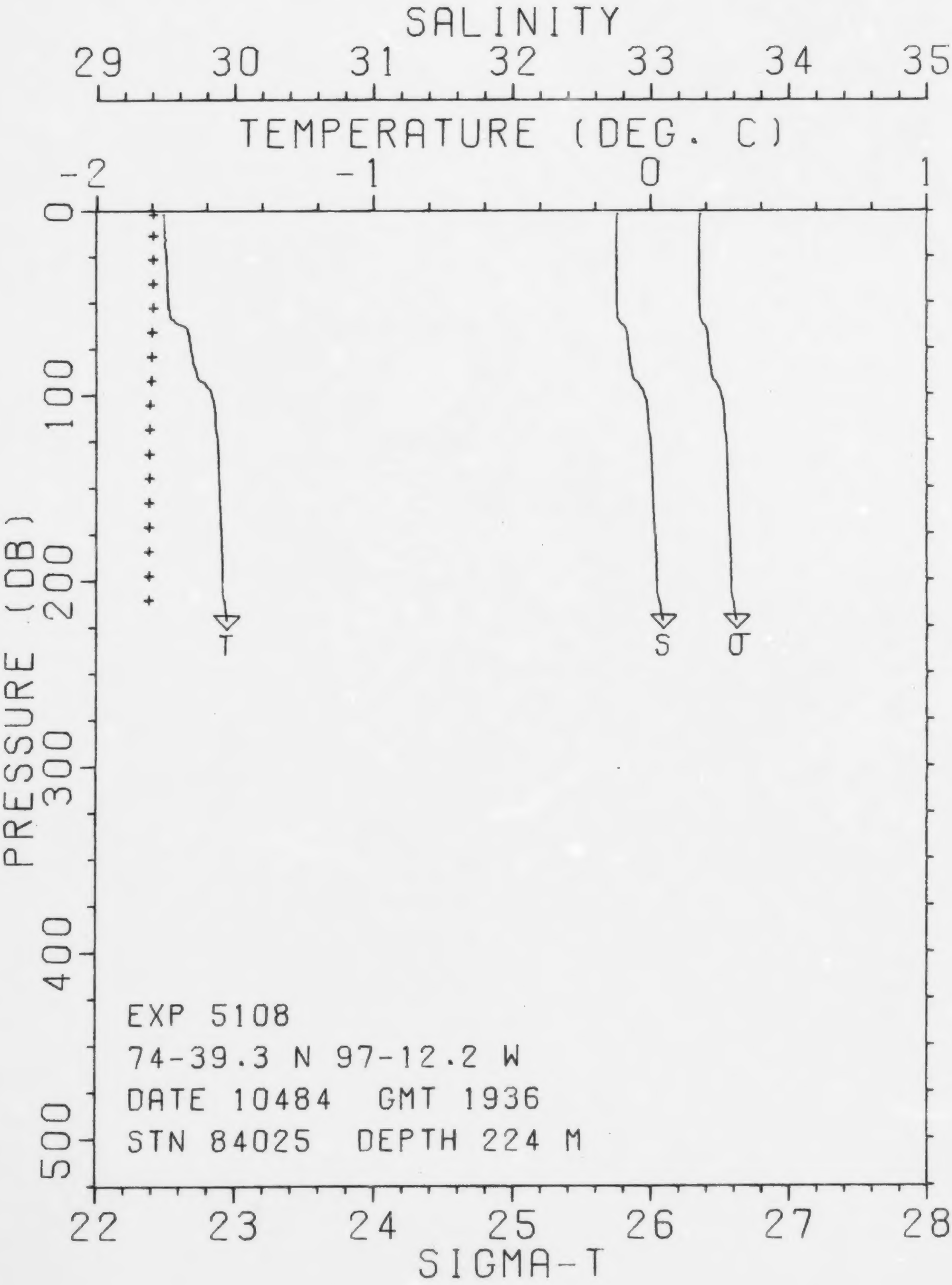
SIGMA-T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PRESSURE (DB)
0
100
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EXP 5108
74-39.3 N 97-12.2 W
DATE 10484 GMT 1936
STN 84025 DEPTH 224 M
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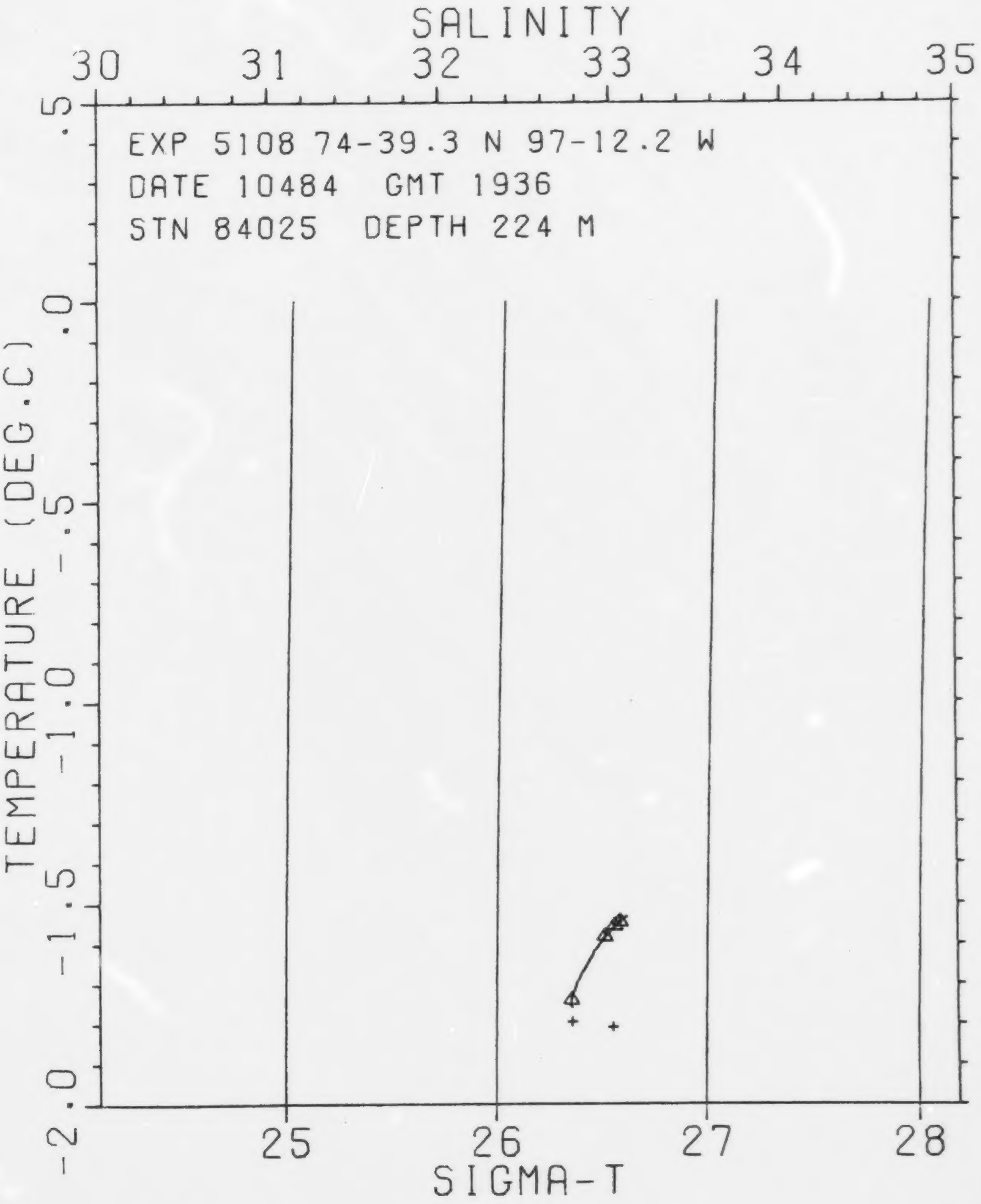
SIGMA-T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EXP 5108 74-39.3 N 97-12.2 W
DATE 10484 GMT 1936
STN 84025 DEPTH 224 M
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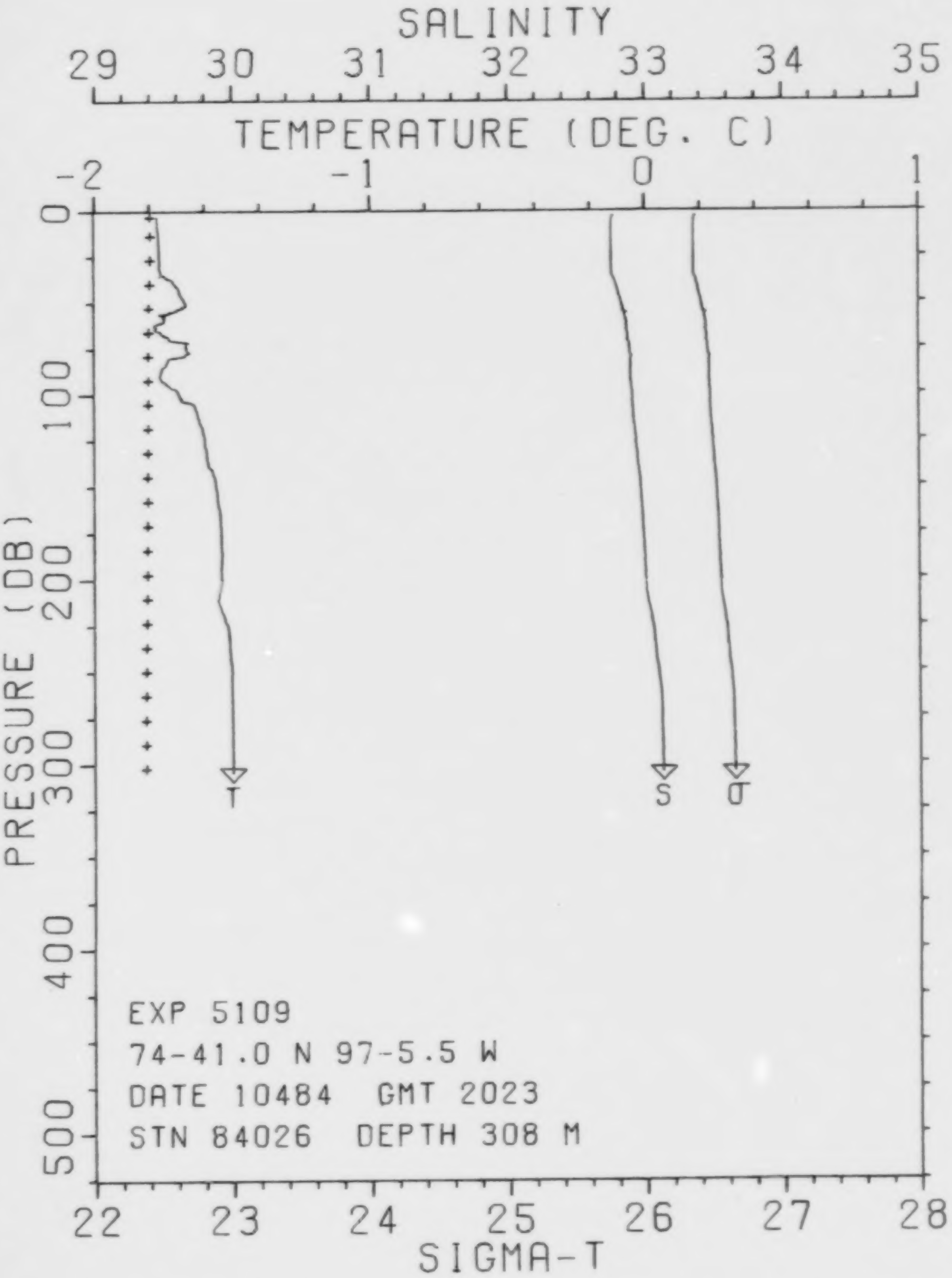
SIGMA-T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1
PRESSURE (DB)
0
100
200
300
400
500
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σ
EXP 5109
74-41.0 N 97-5.5 W
DATE 10484 GMT 2023
STN 84026 DEPTH 308 M
22
23
24
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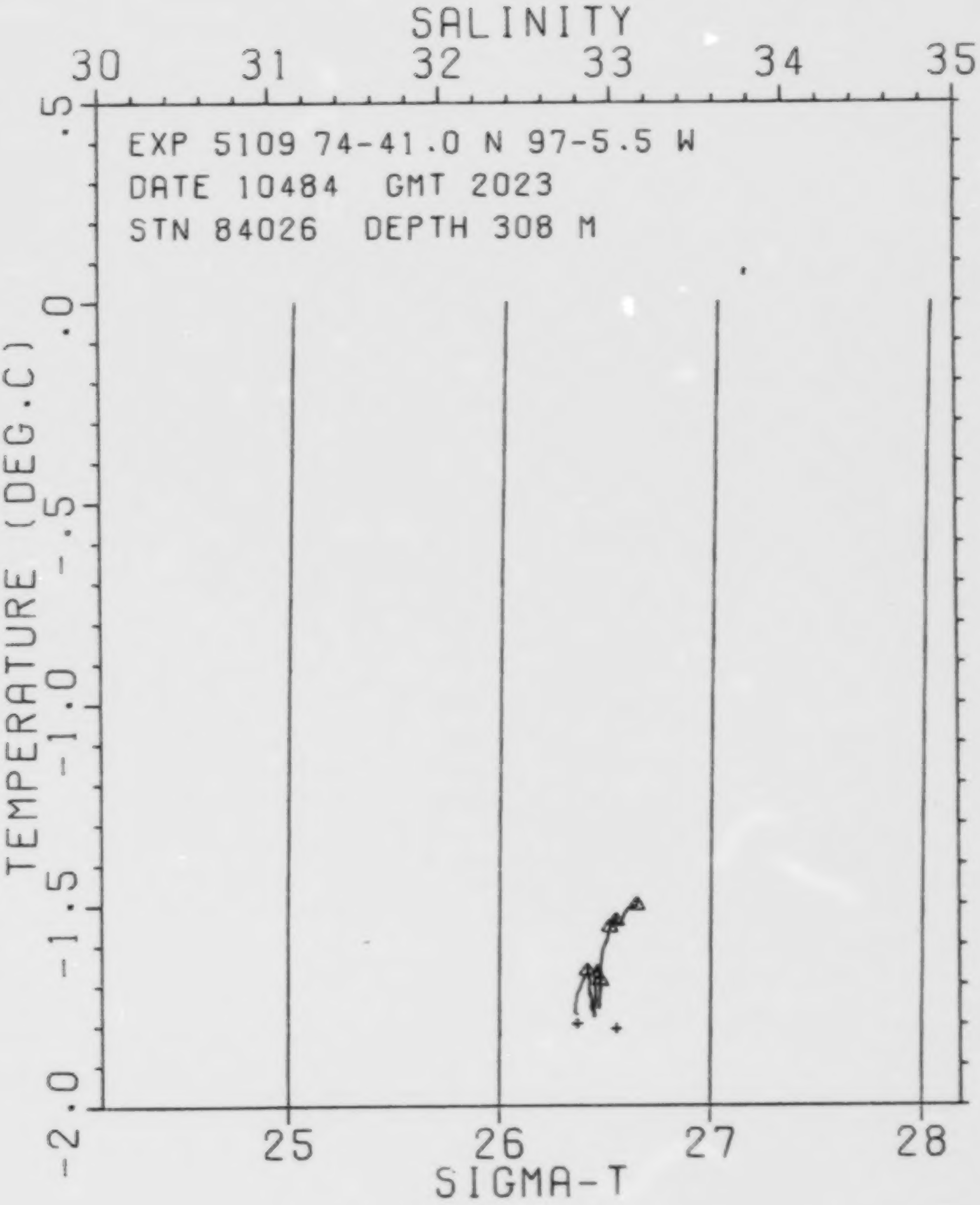
SIGMA-T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35
EXP 5109 74-41.0 N 97-5.5 W
DATE 10484 GMT 2023
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TEMPERATURE (DEG.C)
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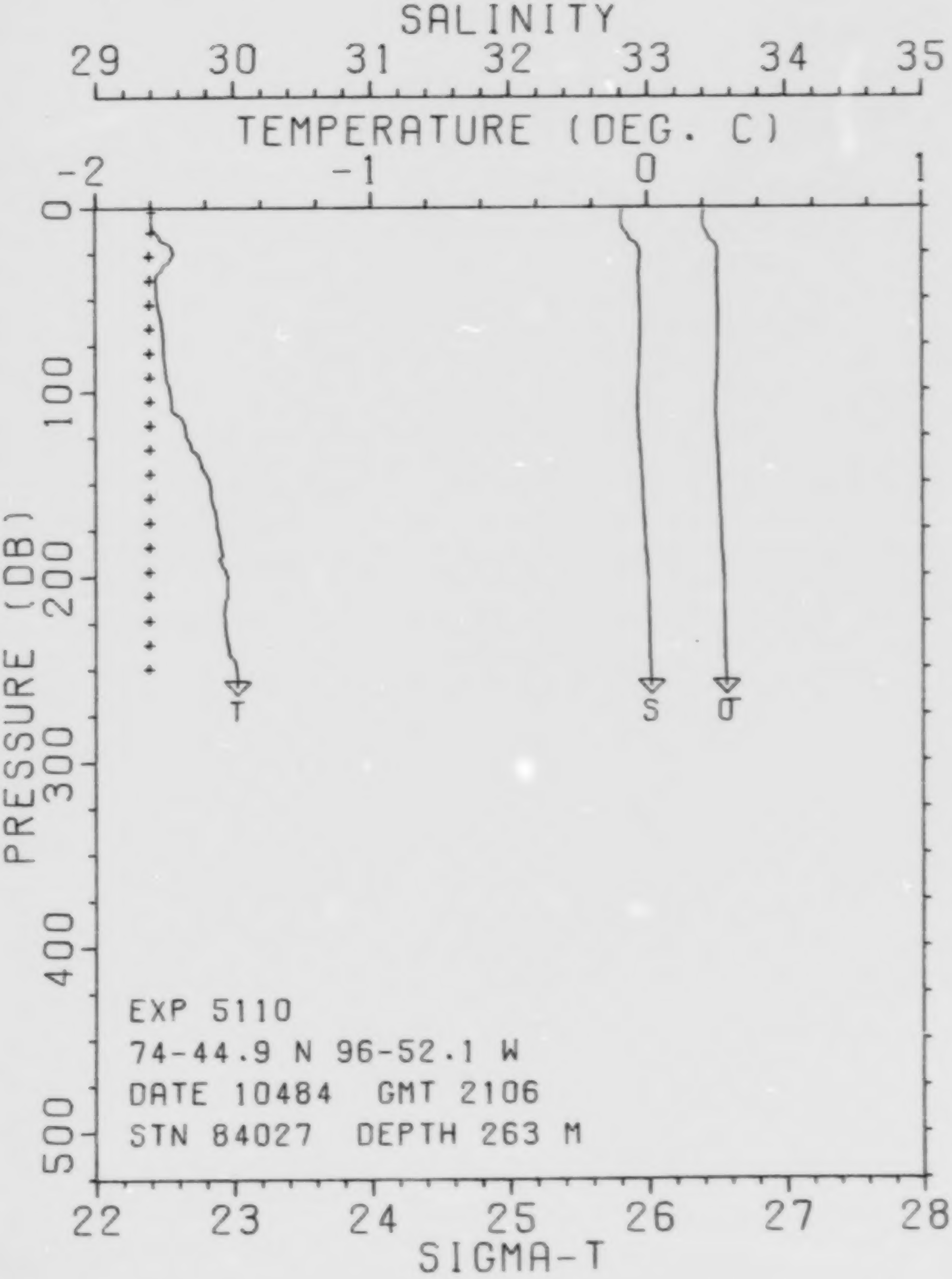
SIGMA-T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PRESSURE (DB)
0
100
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500
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EXP 5110
74-44.9 N 96-52.1 W
DATE 10484 GMT 2106
STN 84027 DEPTH 263 M
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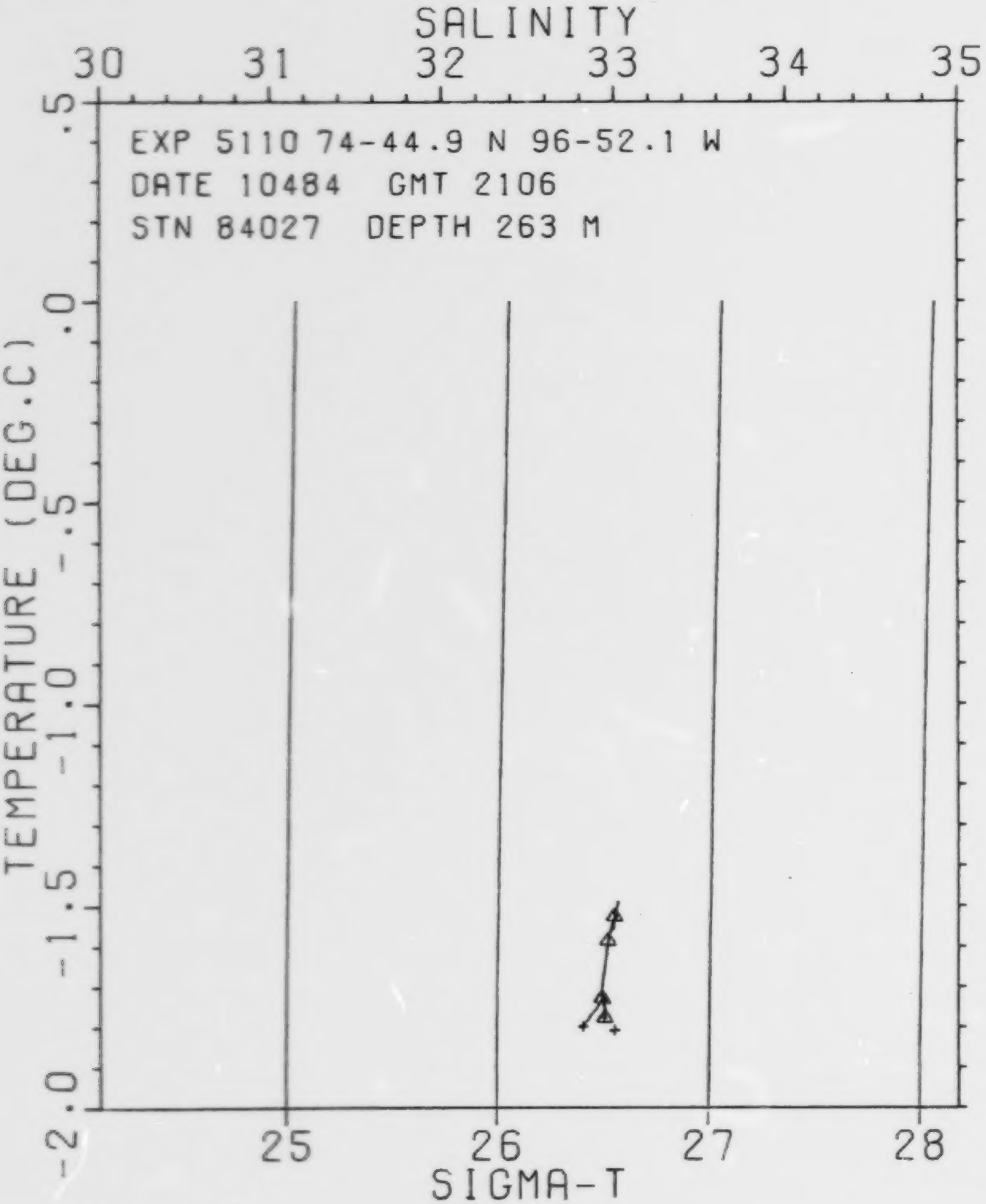
SIGMA-T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EXP 5110 74-44.9 N 96-52.1 W
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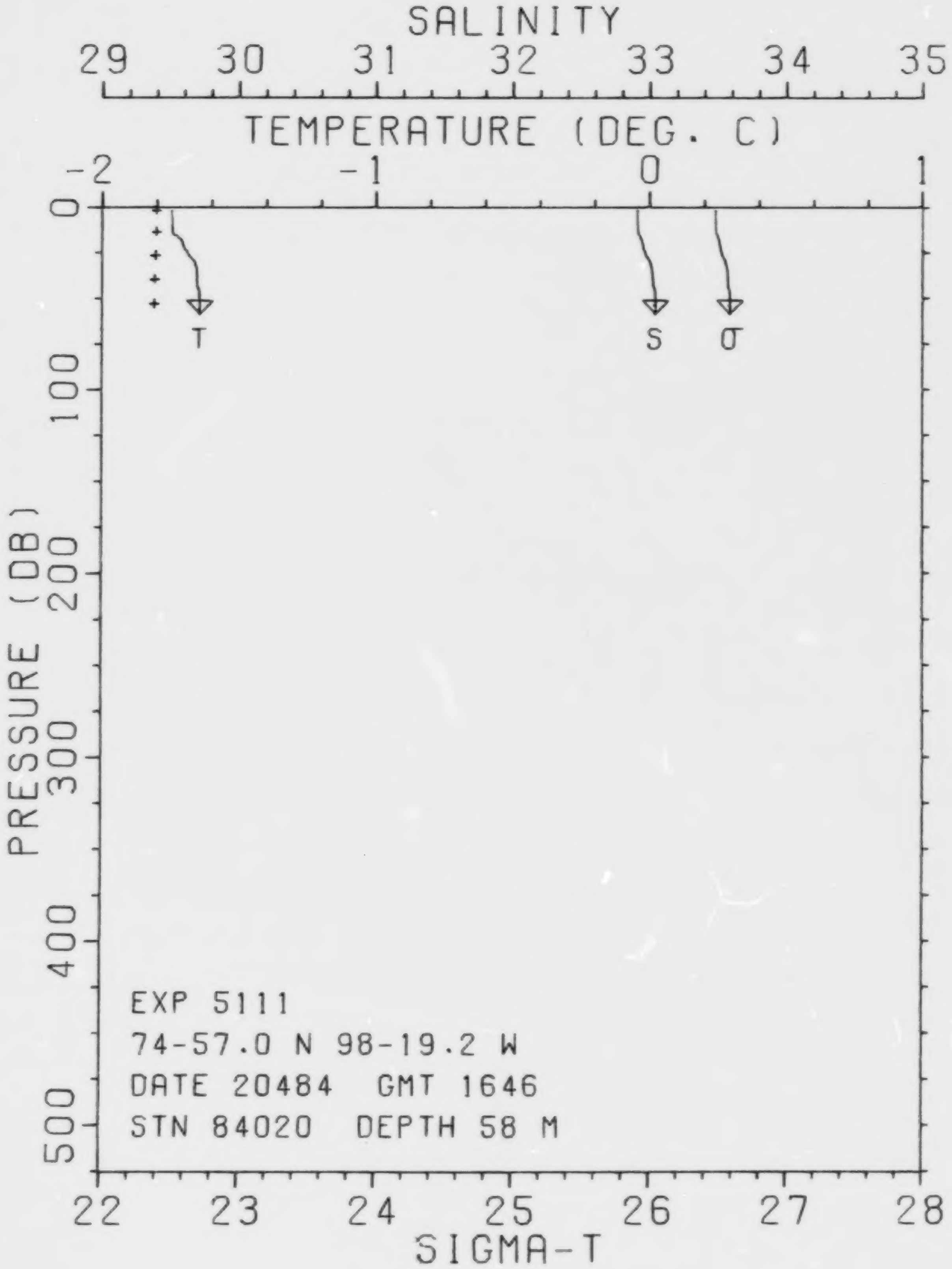
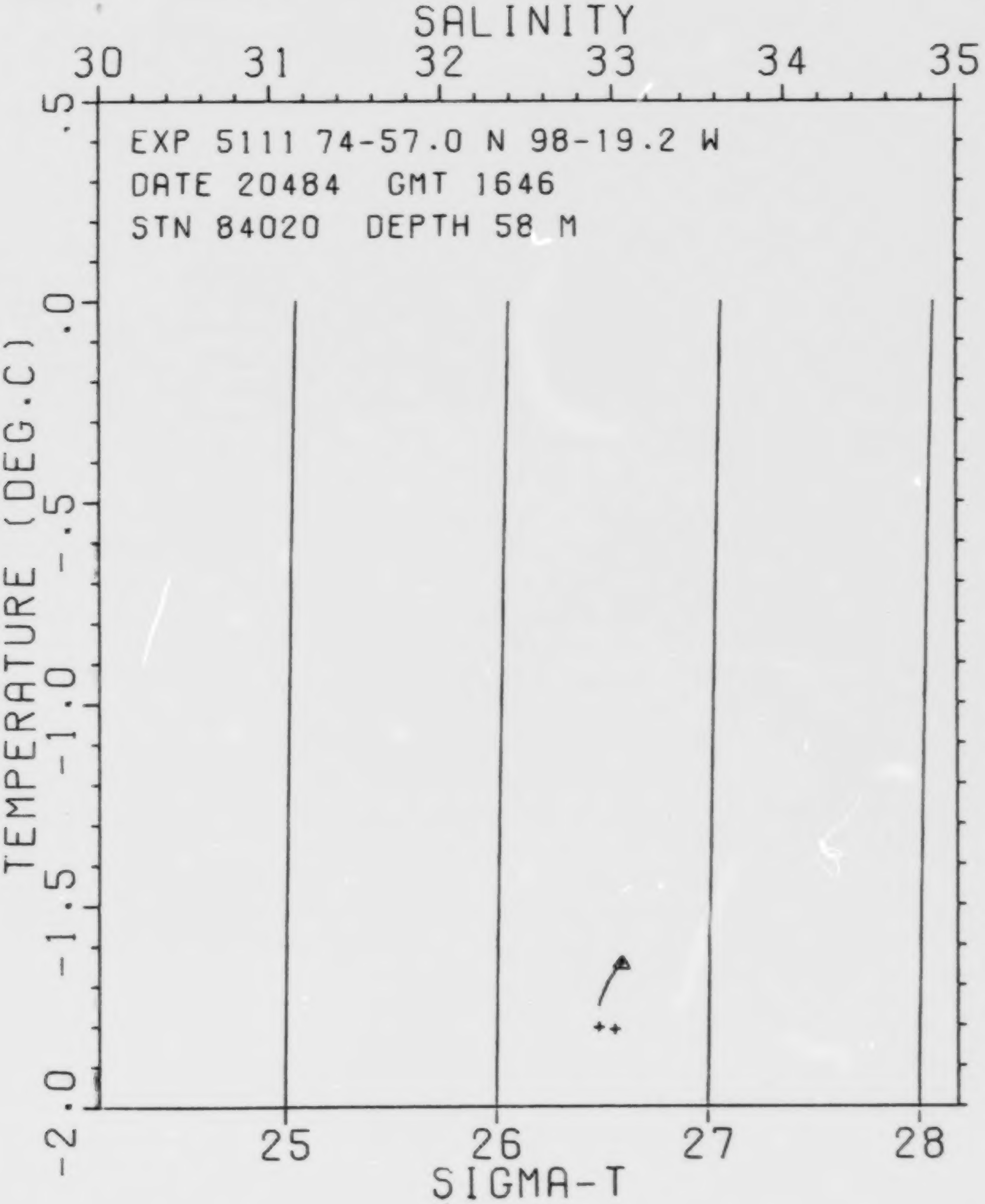
SIGMA-T



EXP 5111
74-57.0 N 98-19.2 W
DATE 20484 GMT 1646
STN 84020 DEPTH 58 M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EXP 5111 74-57.0 N 98-19.2 W
DATE 20484 GMT 1646
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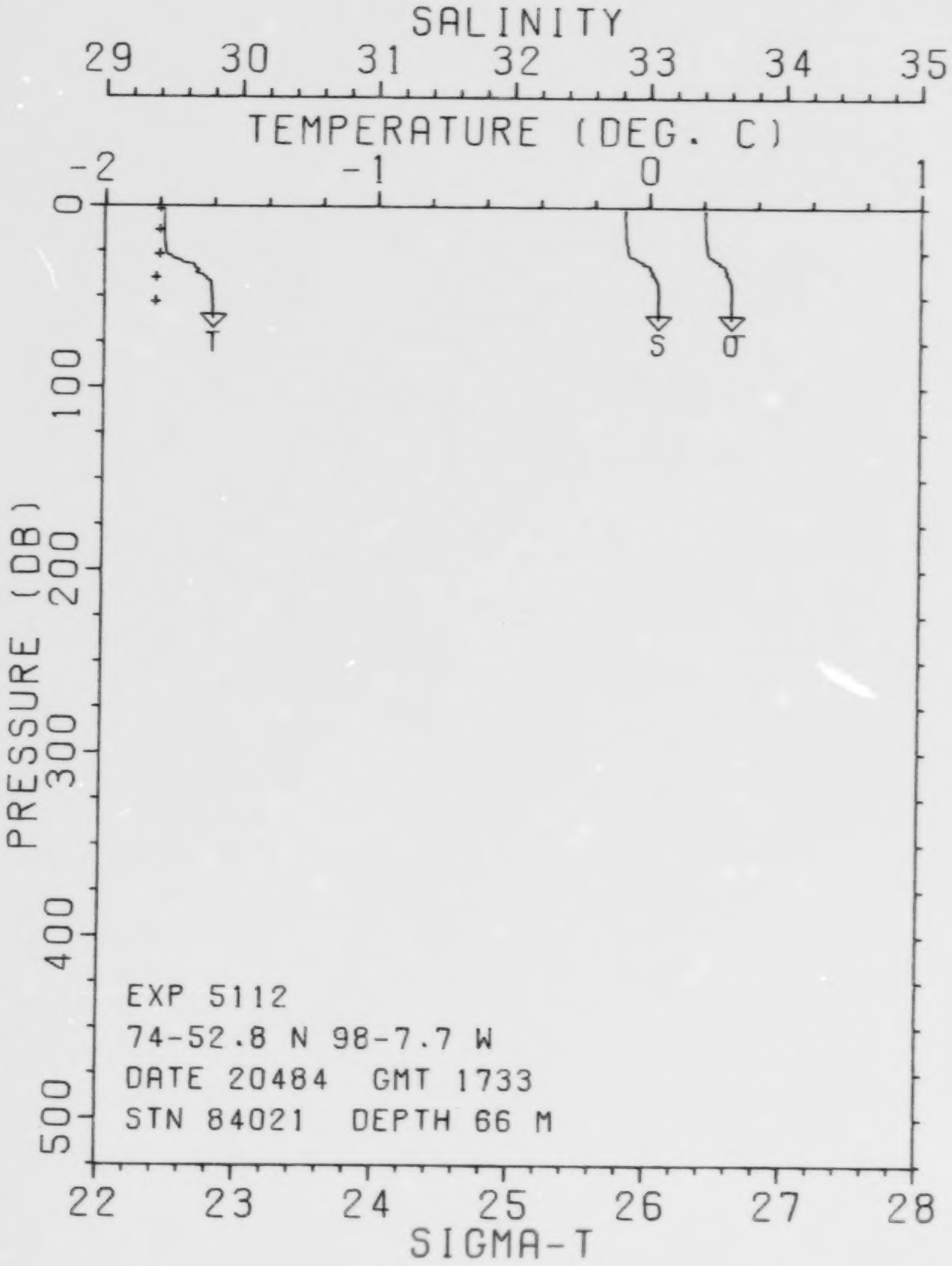
SIGMA-T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500
PRESSURE (DB)
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EXP 5112
74-52.8 N 98-7.7 W
DATE 20484 GMT 1733
STN 84021 DEPTH 66 M
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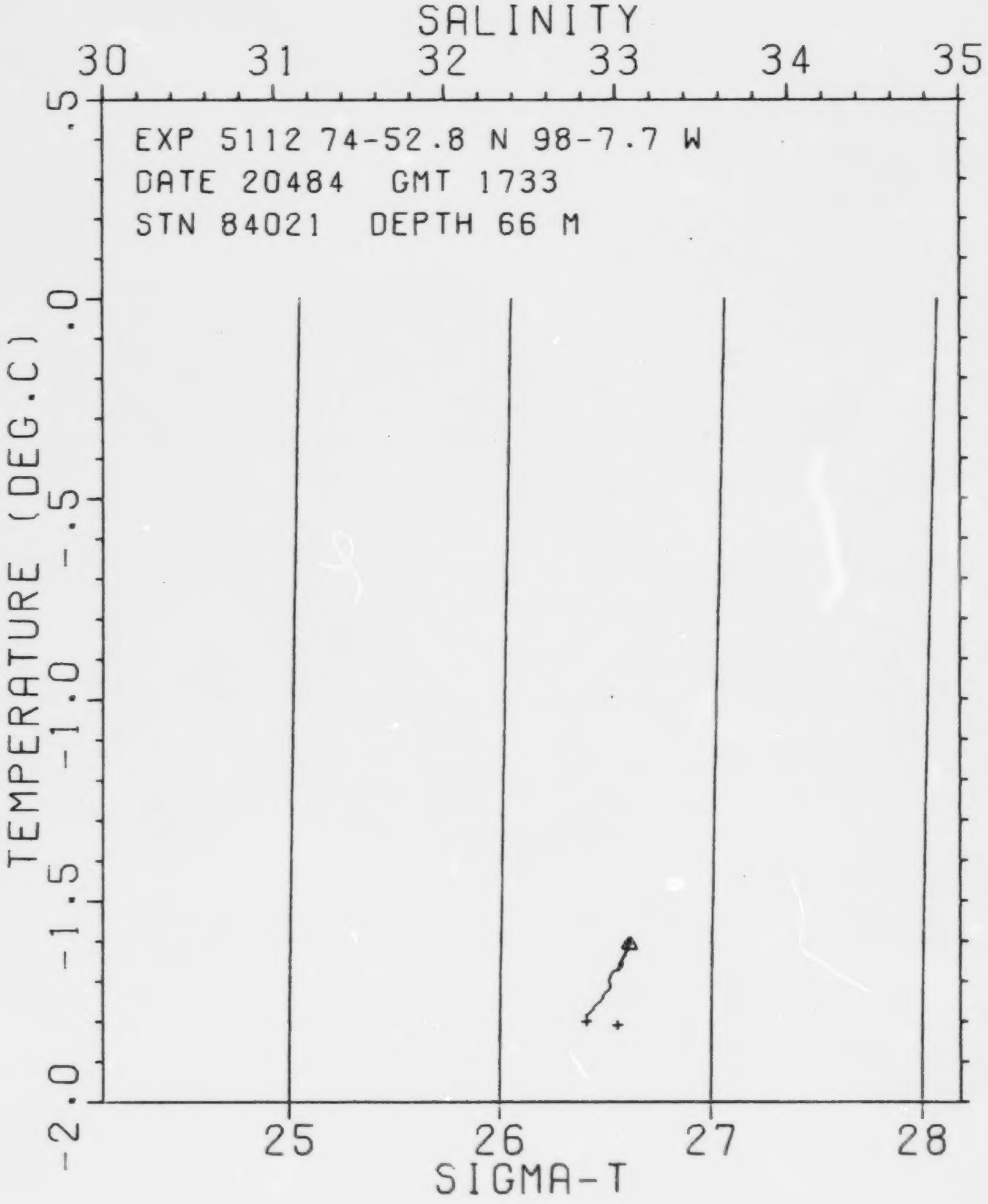
SIGMA-T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EXP 5112 74-52.8 N 98-7.7 W
DATE 20484 GMT 1733
STN 84021 DEPTH 66 M
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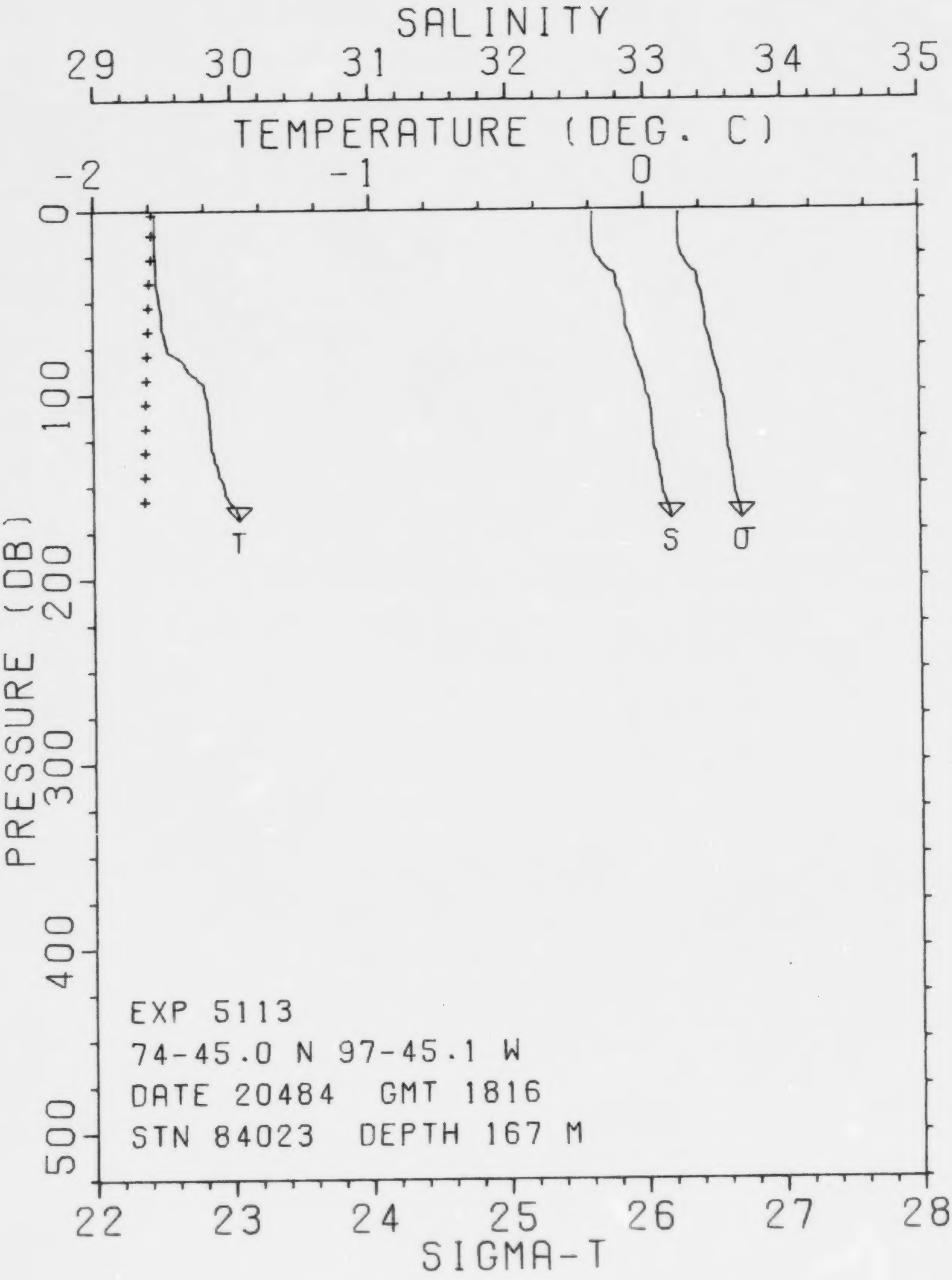
SIGMA-T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PRESSURE (DB)
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100
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EXP 5113
74-45.0 N 97-45.1 W
DATE 20484 GMT 1816
STN 84023 DEPTH 167 M
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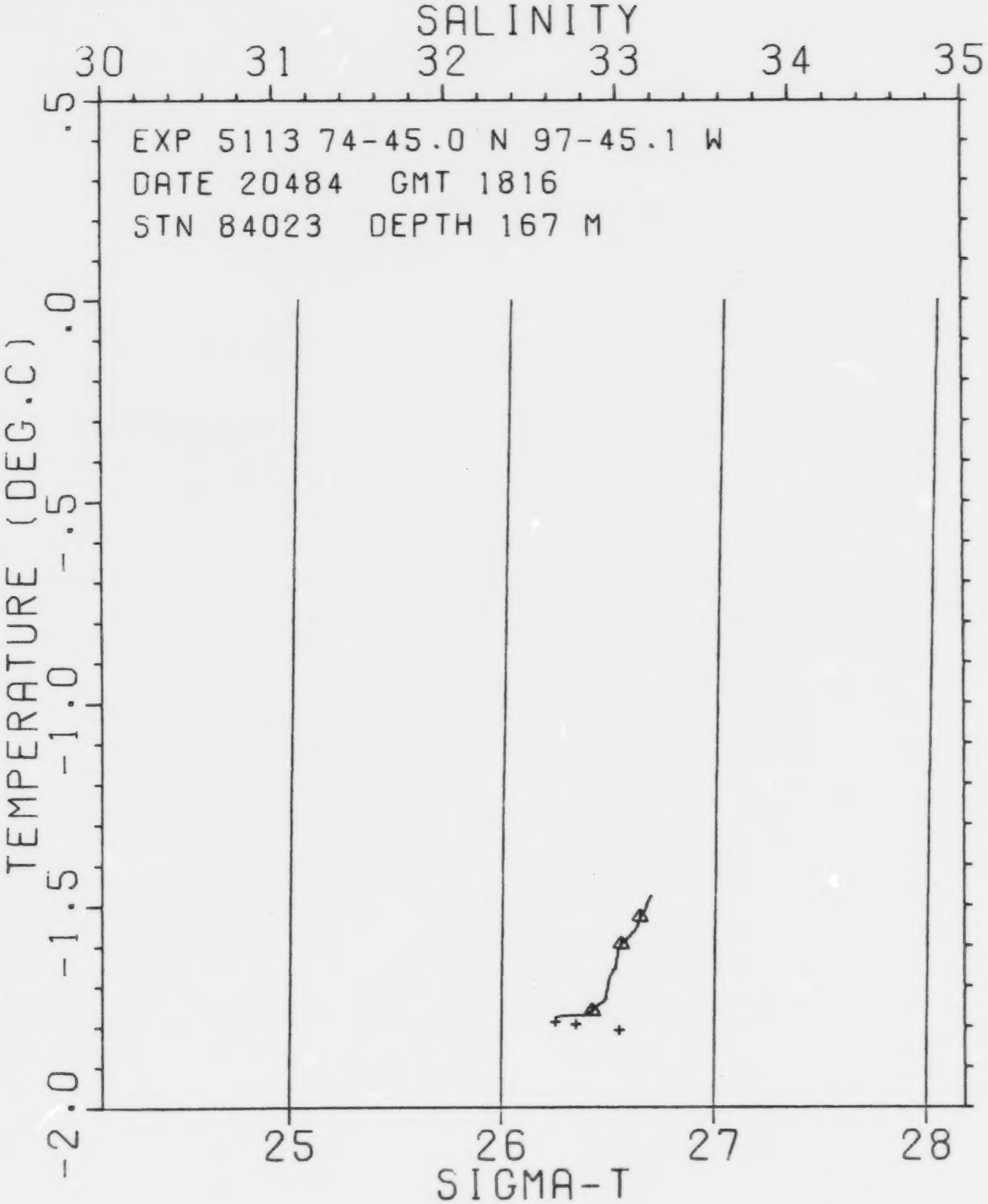
SIGMA-T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34
35
EXP 5113 74-45.0 N 97-45.1 W
DATE 20484 GMT 1816
STN 84023 DEPTH 167 M
TEMPERATURE (DEG.C)
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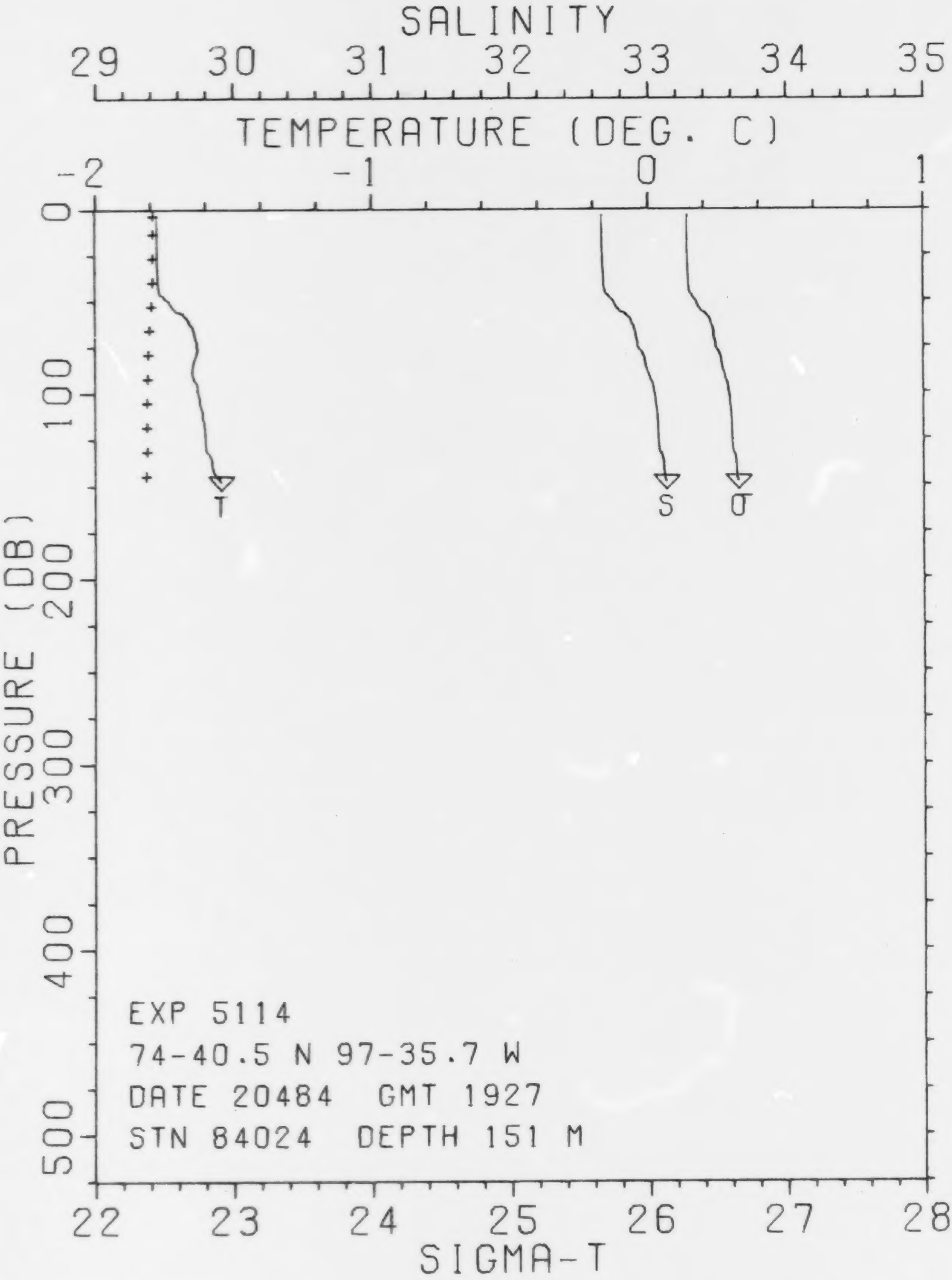
.0
-.5
-1.0
-1.5
-2.0
25
26
27
28
SIGMA-T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34
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TEMPERATURE (DEG. C)
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-1
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1
PRESSURE (DB)
0
100
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EXP 5114
74-40.5 N 97-35.7 W
DATE 20484 GMT 1927
STN 84024 DEPTH 151 M
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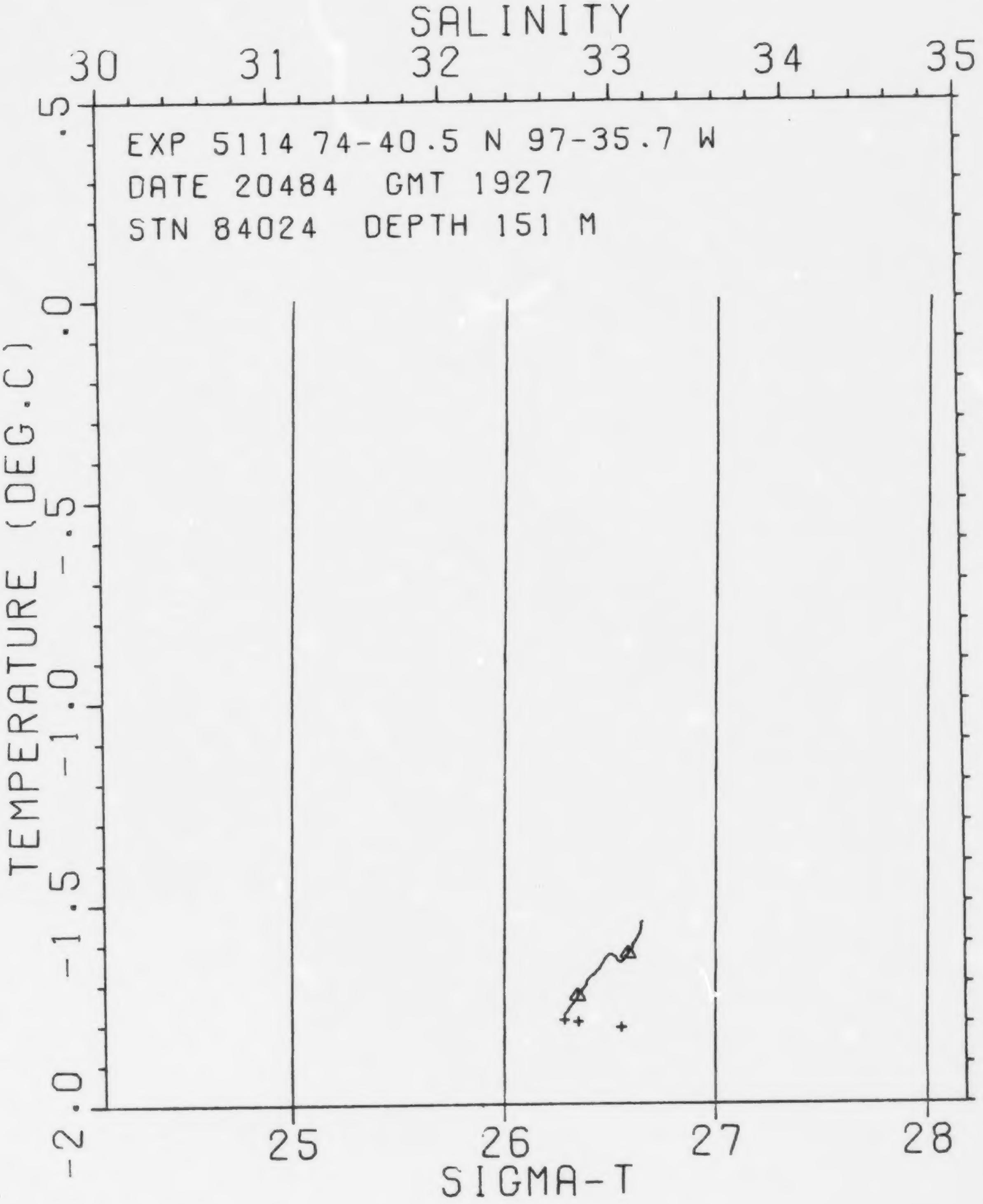
SIGMA-T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EXP 5114 74-40.5 N 97-35.7 W
DATE 20484 GMT 1927
STN 84024 DEPTH 151 M
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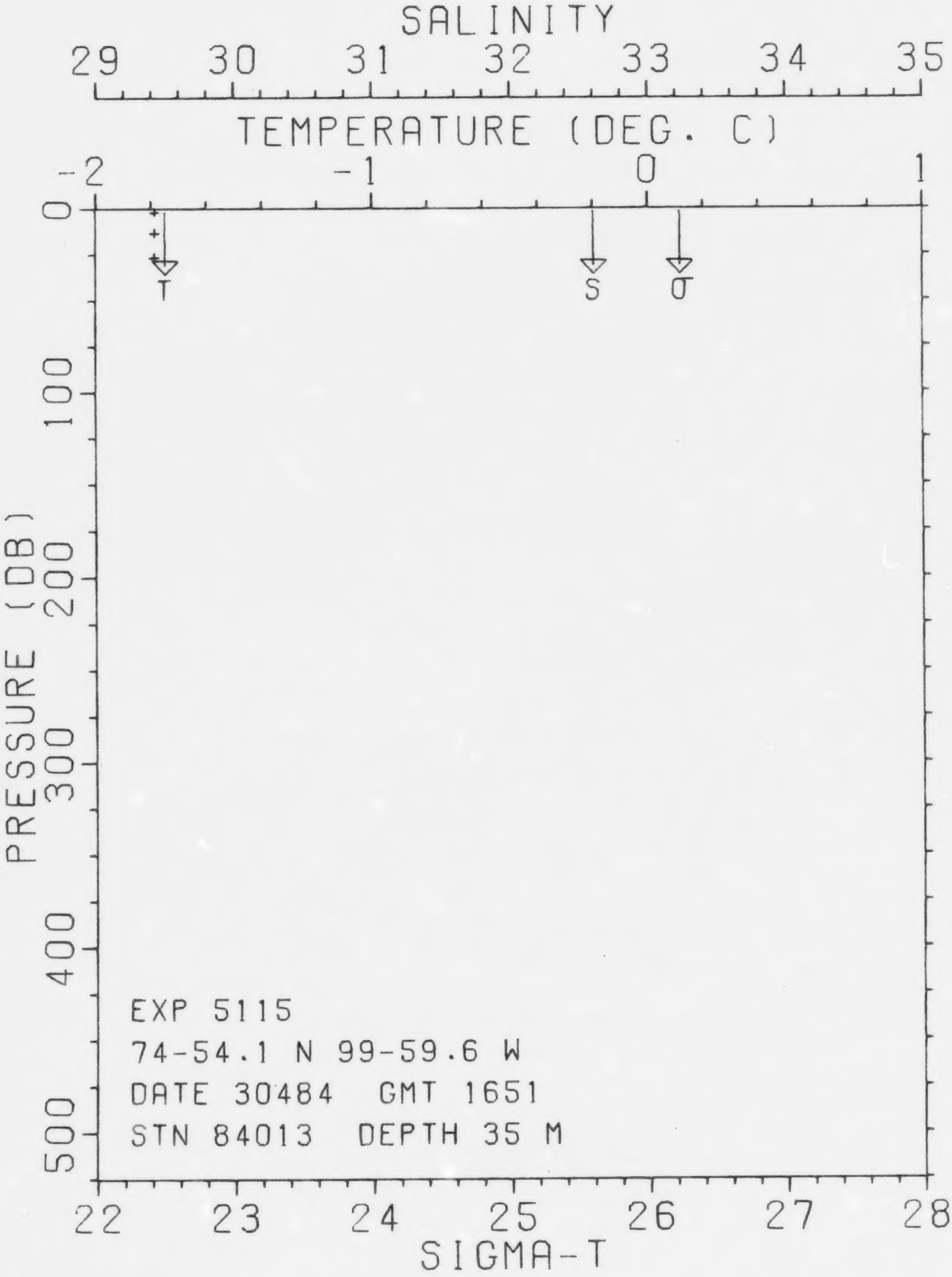
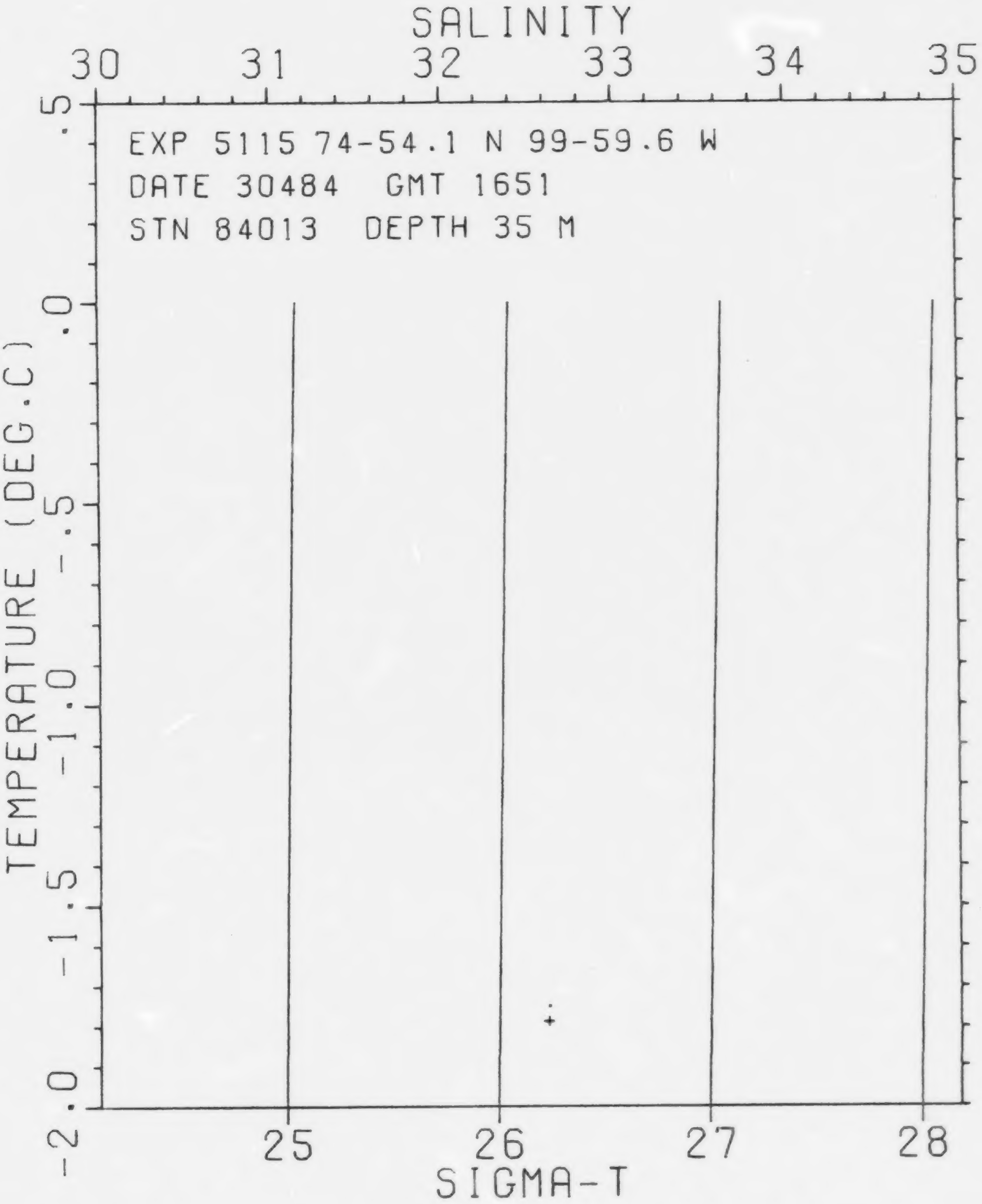
SIGMA-T



EXP 5115
74-54.1 N 99-59.6 W
DATE 30484 GMT 1651
STN 84013 DEPTH 35 M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EXP 5115 74-54.1 N 99-59.6 W
DATE 30484 GMT 1651
STN 84013 DEPTH 35 M
TEMPERATURE (DEG.C)
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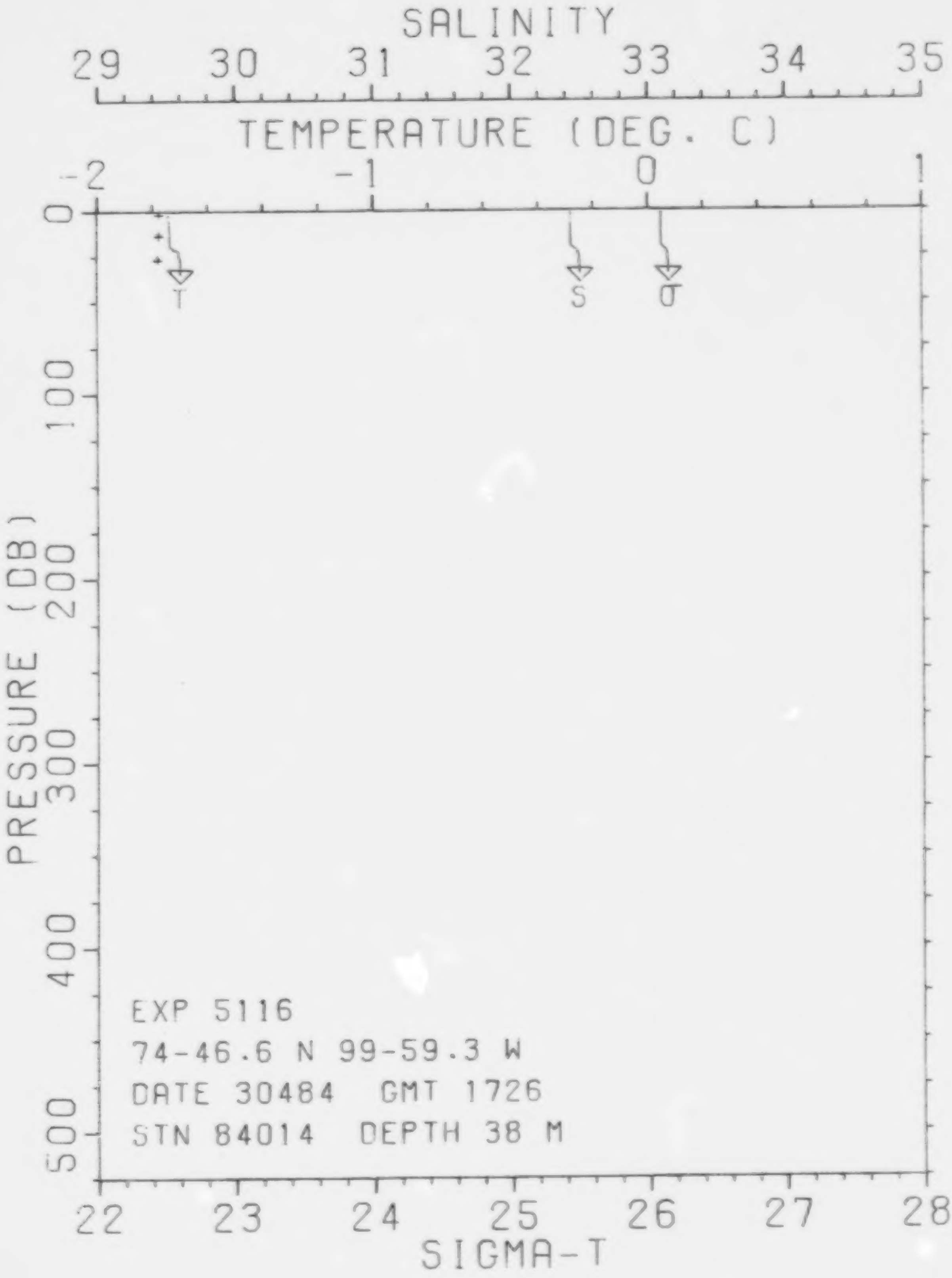
SIGMA-T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TEMPERATURE (DEG. C)
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-1
0
1
PRESSURE (DB)
0
100
200
300
400
500
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EXP 5116
74-46.6 N 99-59.3 W
DATE 30484 GMT 1726
STN 84014 DEPTH 38 M
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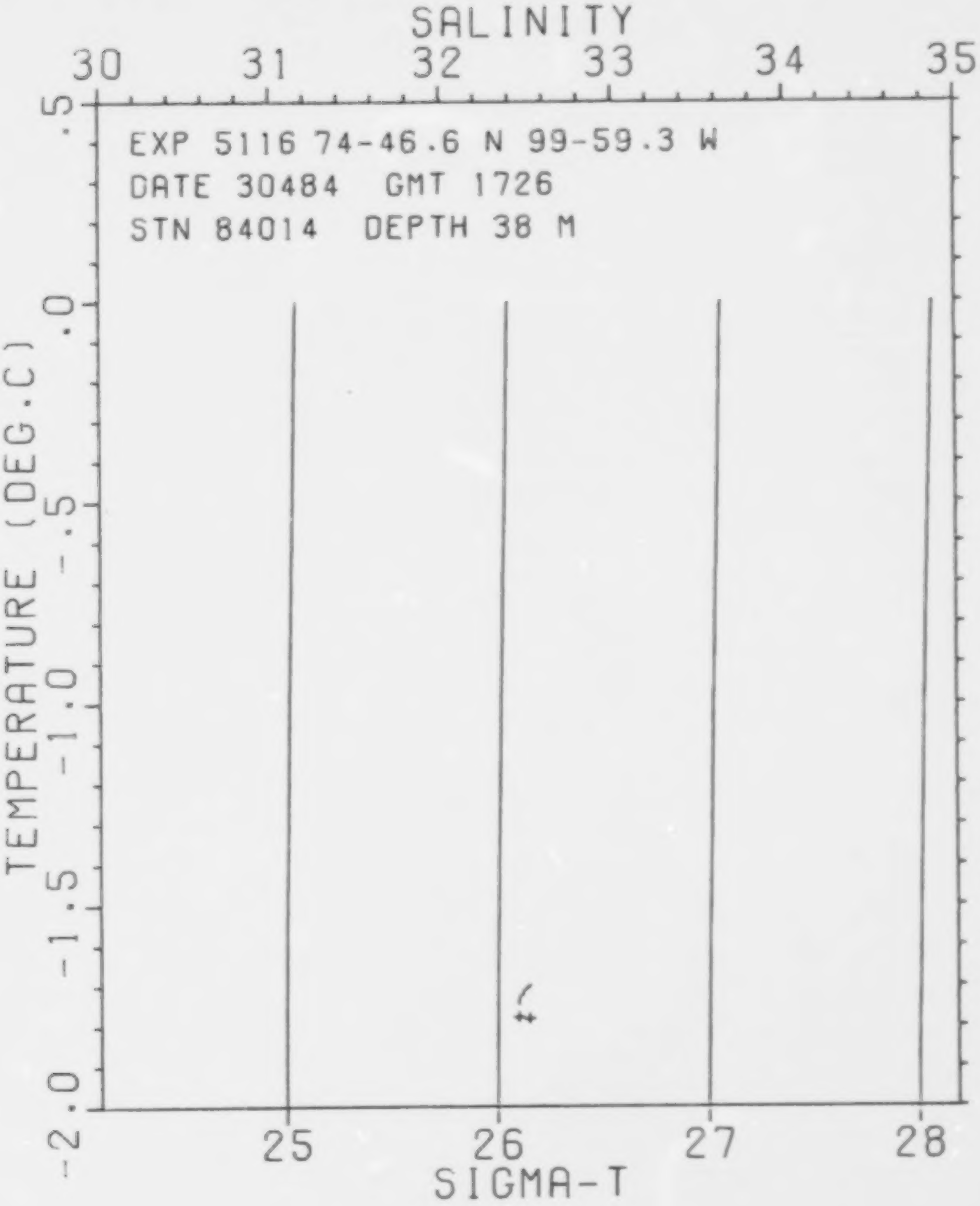
SIGMA-T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EXP 5116 74-46.6 N 99-59.3 W
DATE 30484 GMT 1726
STN 84014 DEPTH 38 M
TEMPERATURE (DEG.C)
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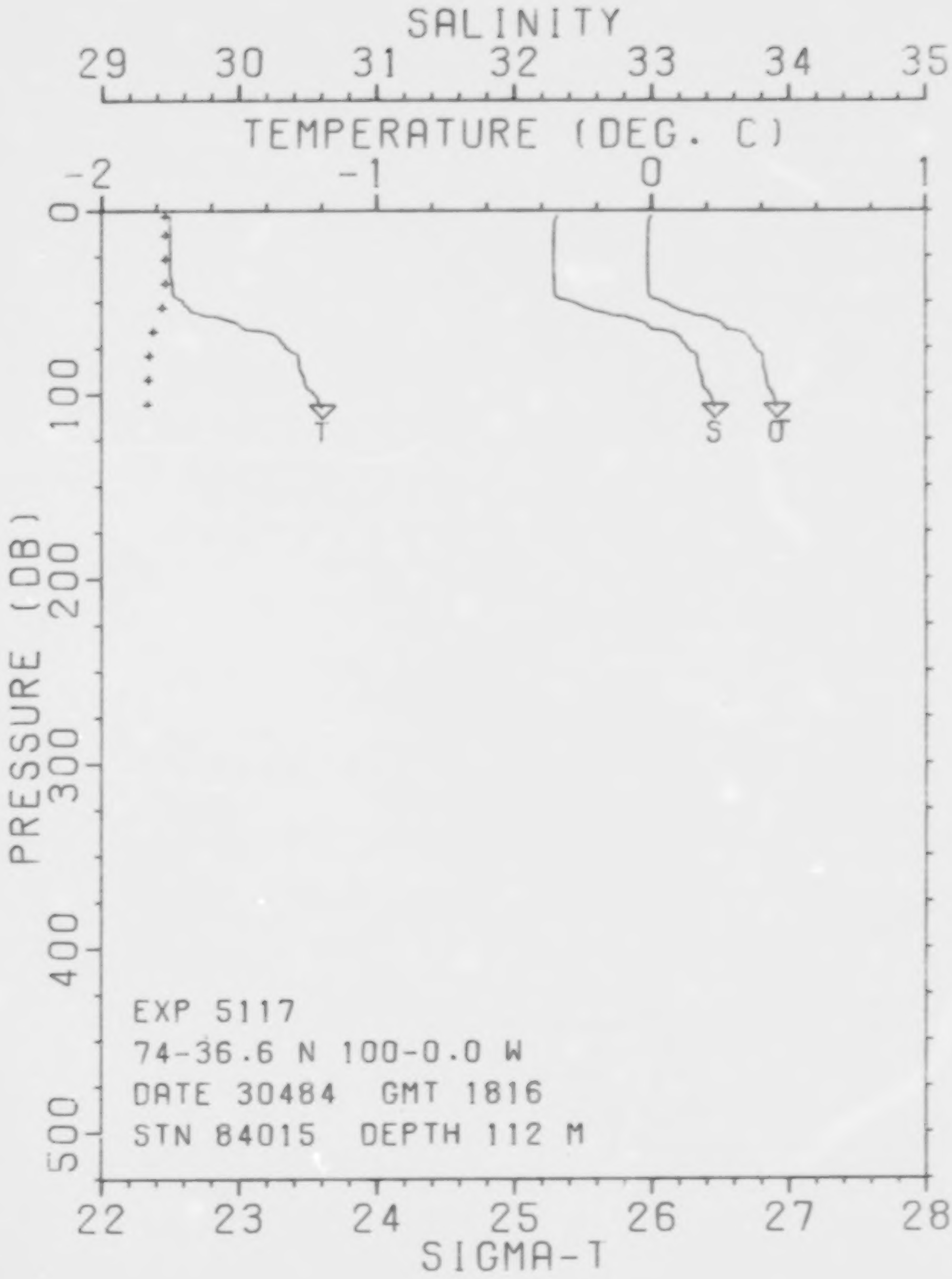
SIGMA-T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PRESSURE (DB)
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EXP 5117
74-36.6 N 100-0.0 W
DATE 30484 GMT 1816
STN 84015 DEPTH 112 M
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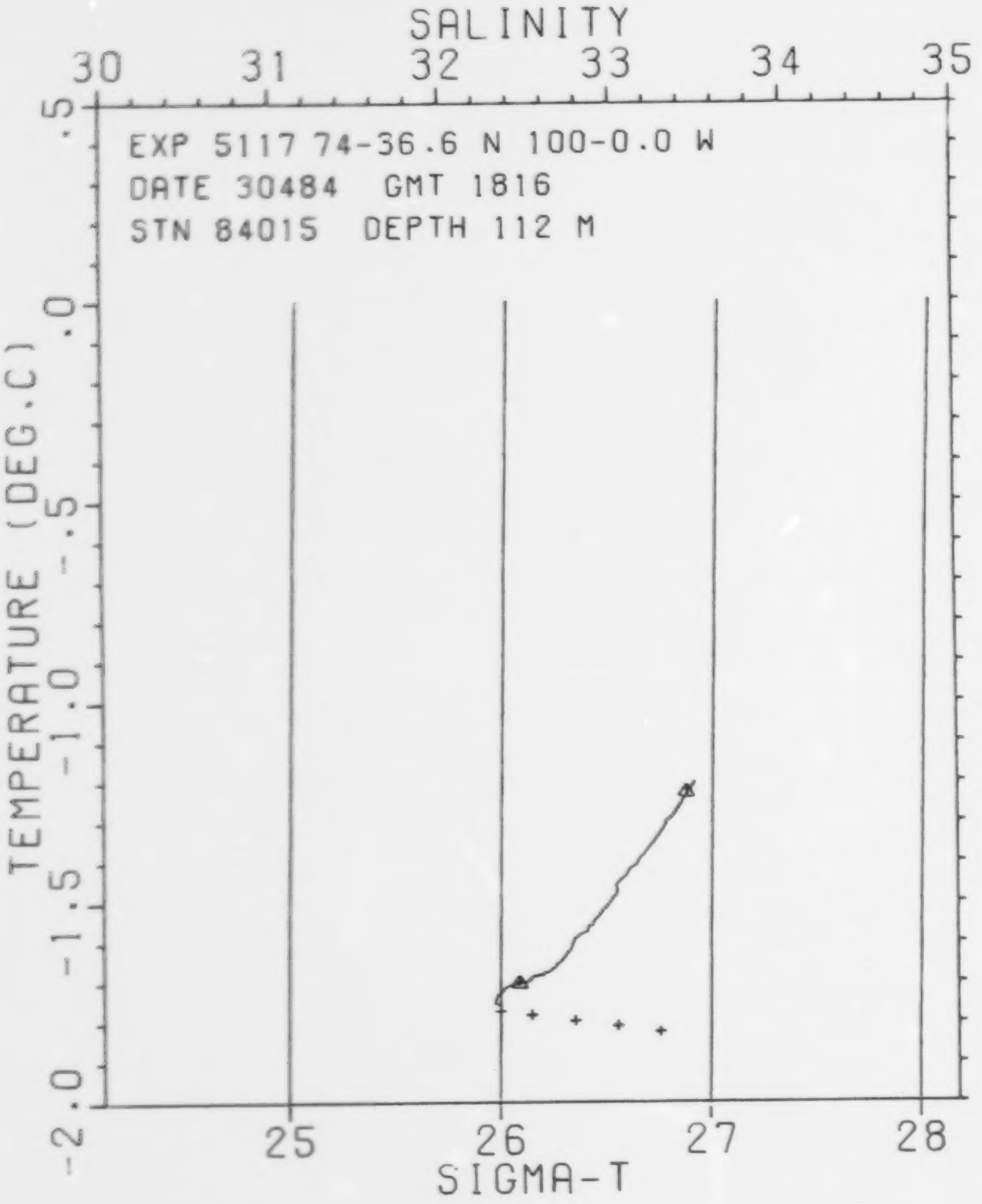
SIGMA-T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STN 84015 DEPTH 112 M
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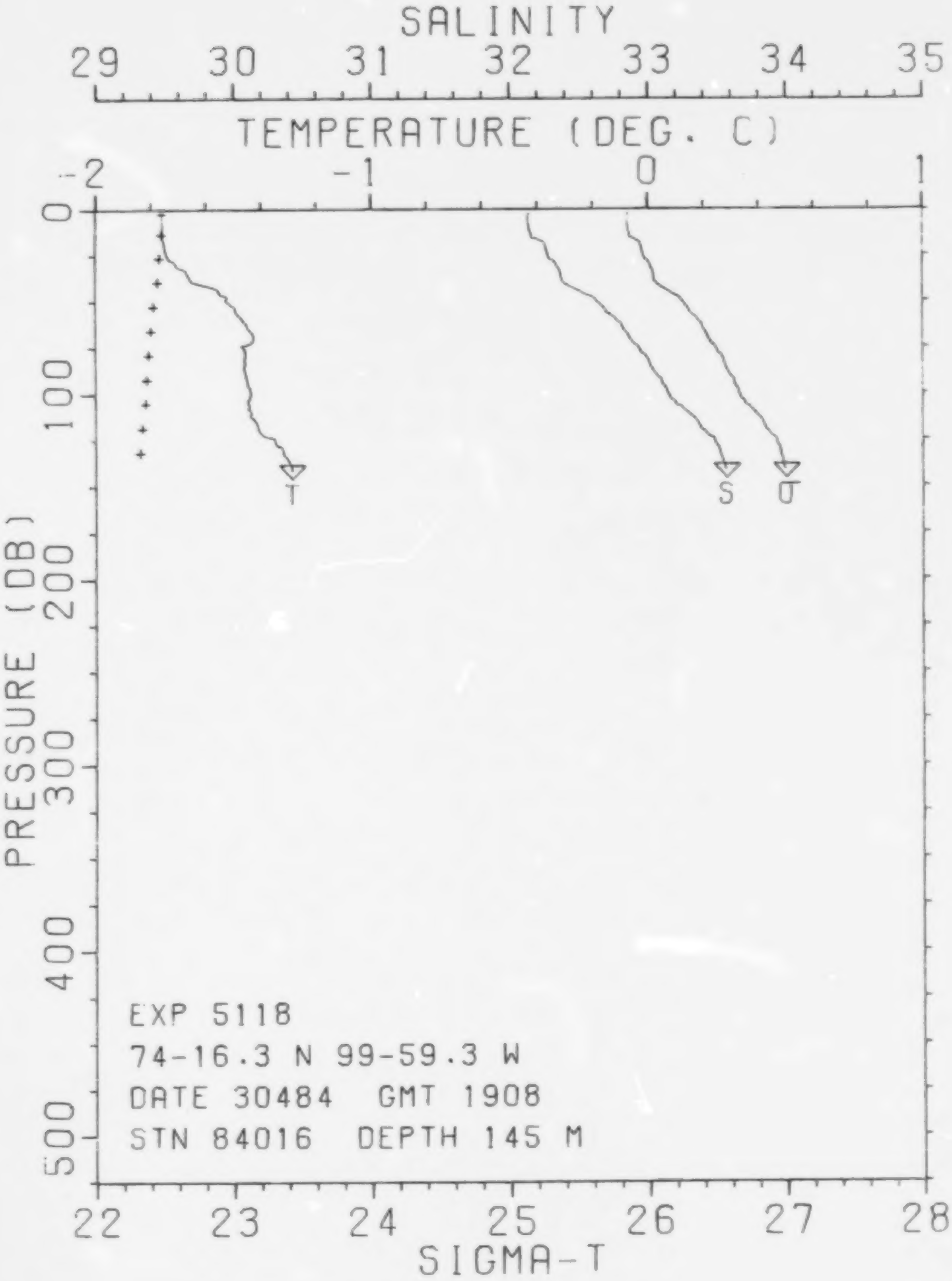
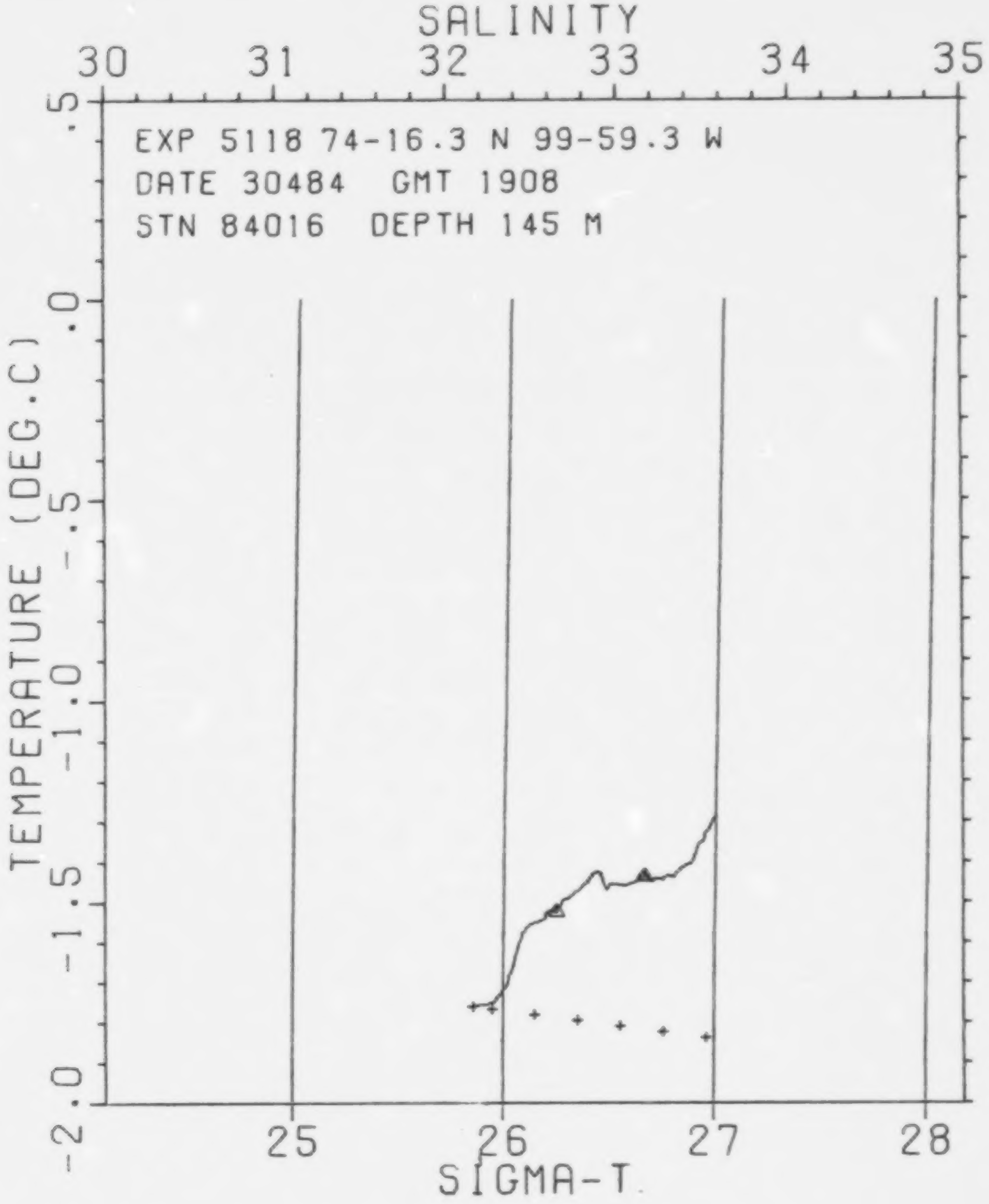
SIGMA-T



EXP 5118
74-16.3 N 99-59.3 W
DATE 30484 GMT 1908
STN 84016 DEPTH 145 M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DATE 30484 GMT 1908
STN 84016 DEPTH 145 M
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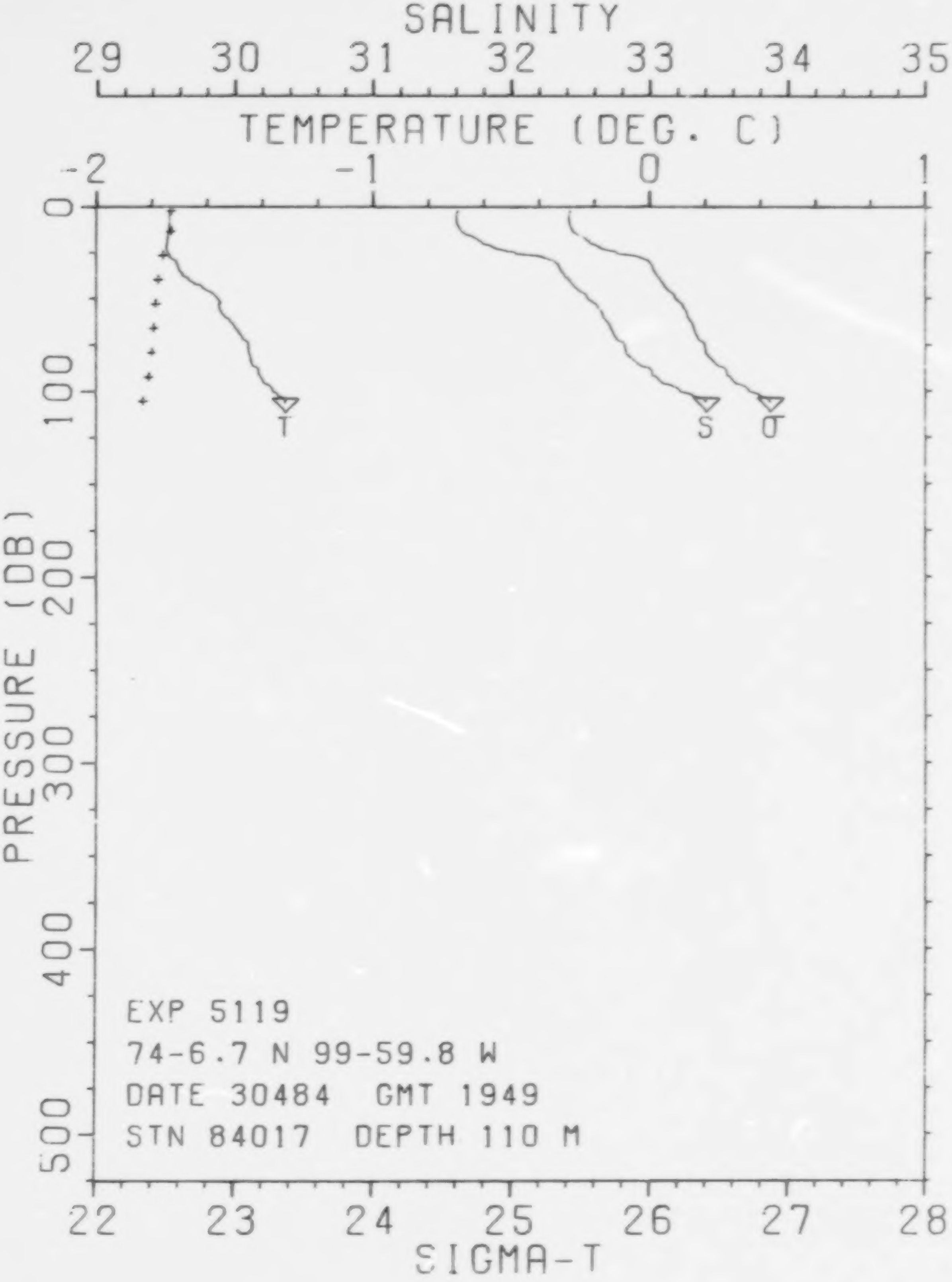
SIGMA-T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PRESSURE (DB)
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EXP 5119
74-6.7 N 99-59.8 W
DATE 30484 GMT 1949
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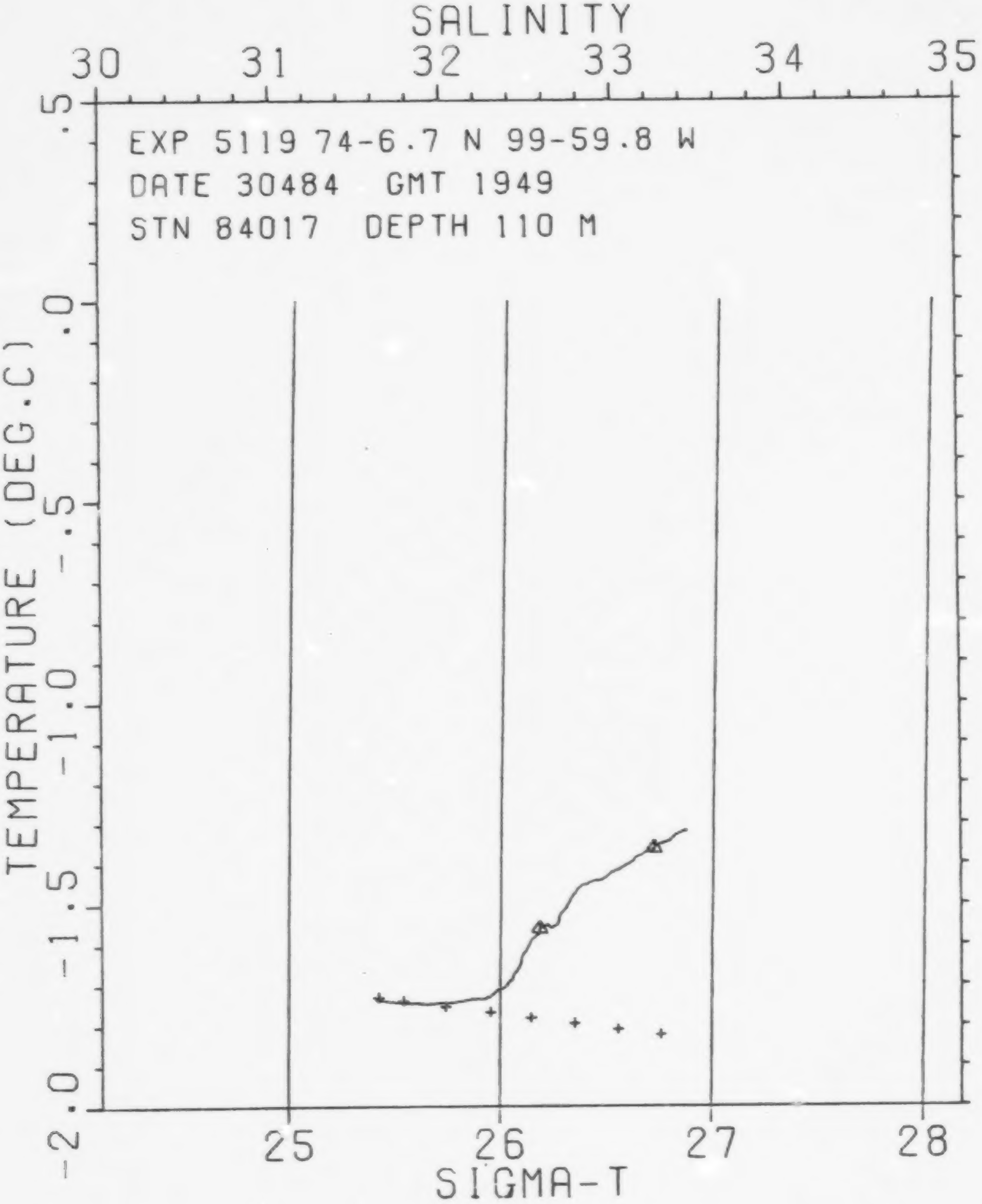
SIGMA-T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DATE 30484 GMT 1949
STN 84017 DEPTH 110 M
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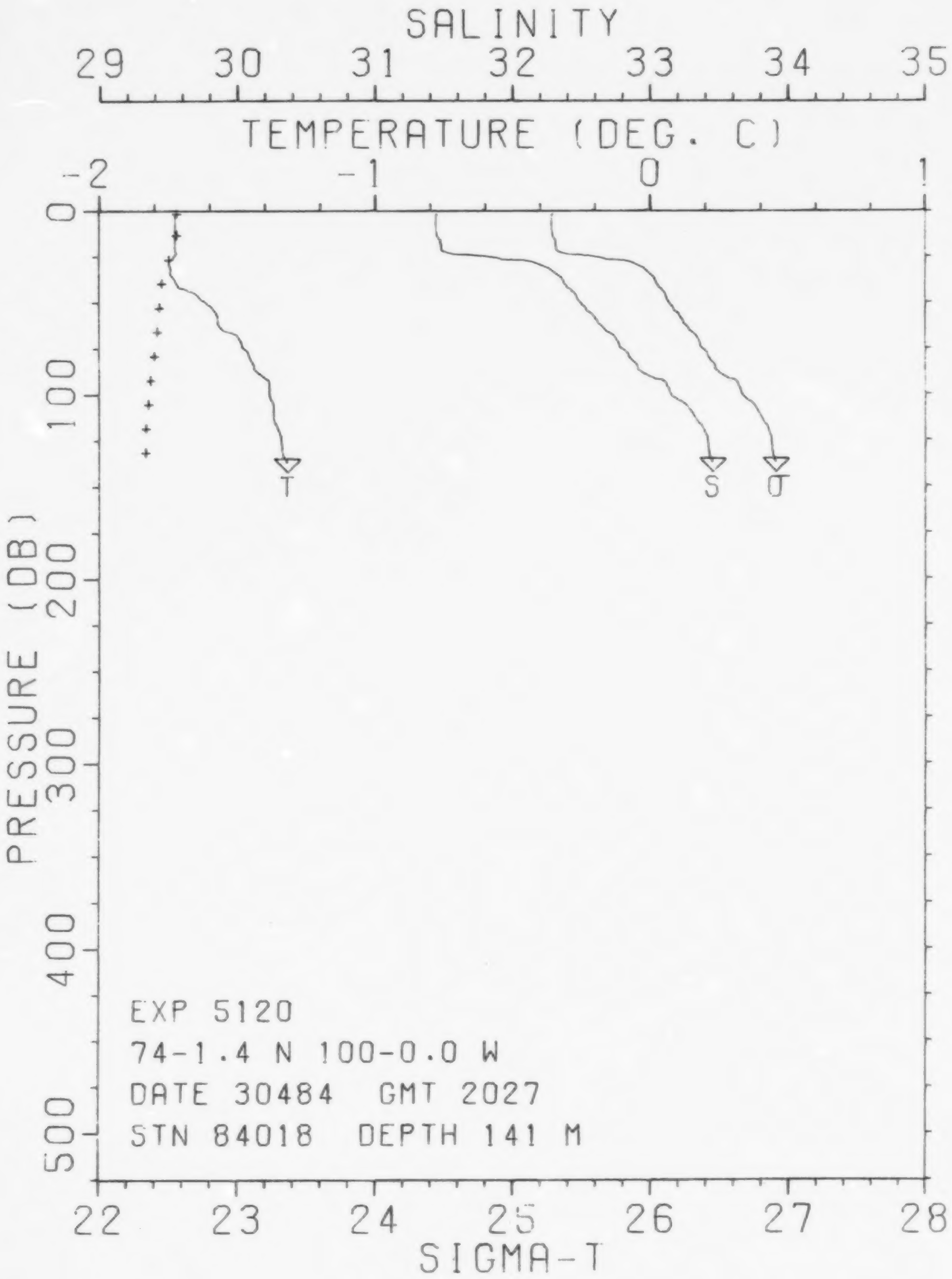
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PRESSURE (DB)
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EXP 5120
74-1.4 N 100-0.0 W
DATE 30484 GMT 2027
STN 84018 DEPTH 141 M
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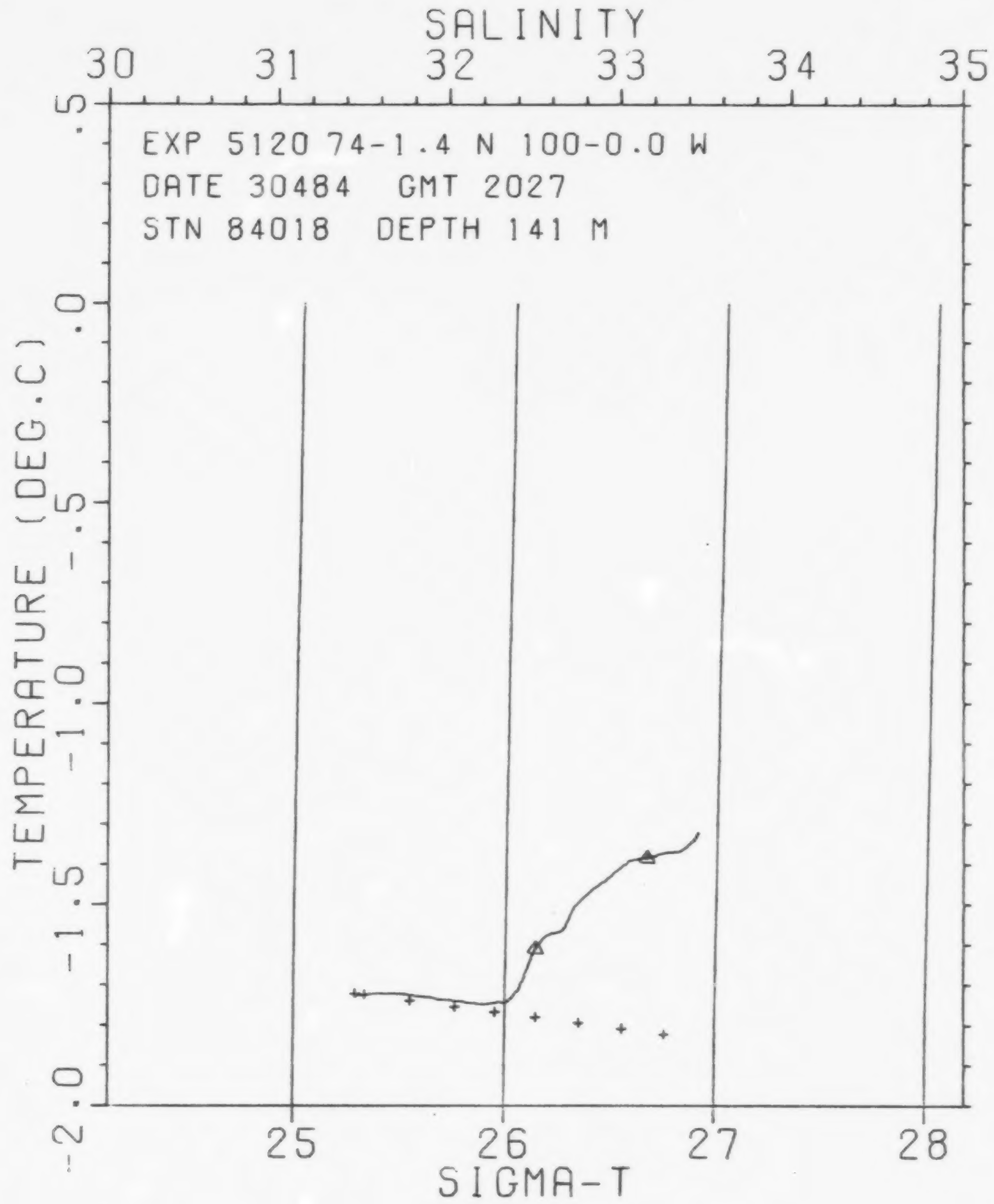
SIGMA-T


SALINITY
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EXP 5120 74-1.4 N 100-0.0 W
DATE 30484 GMT 2027
STN 84018 DEPTH 141 M
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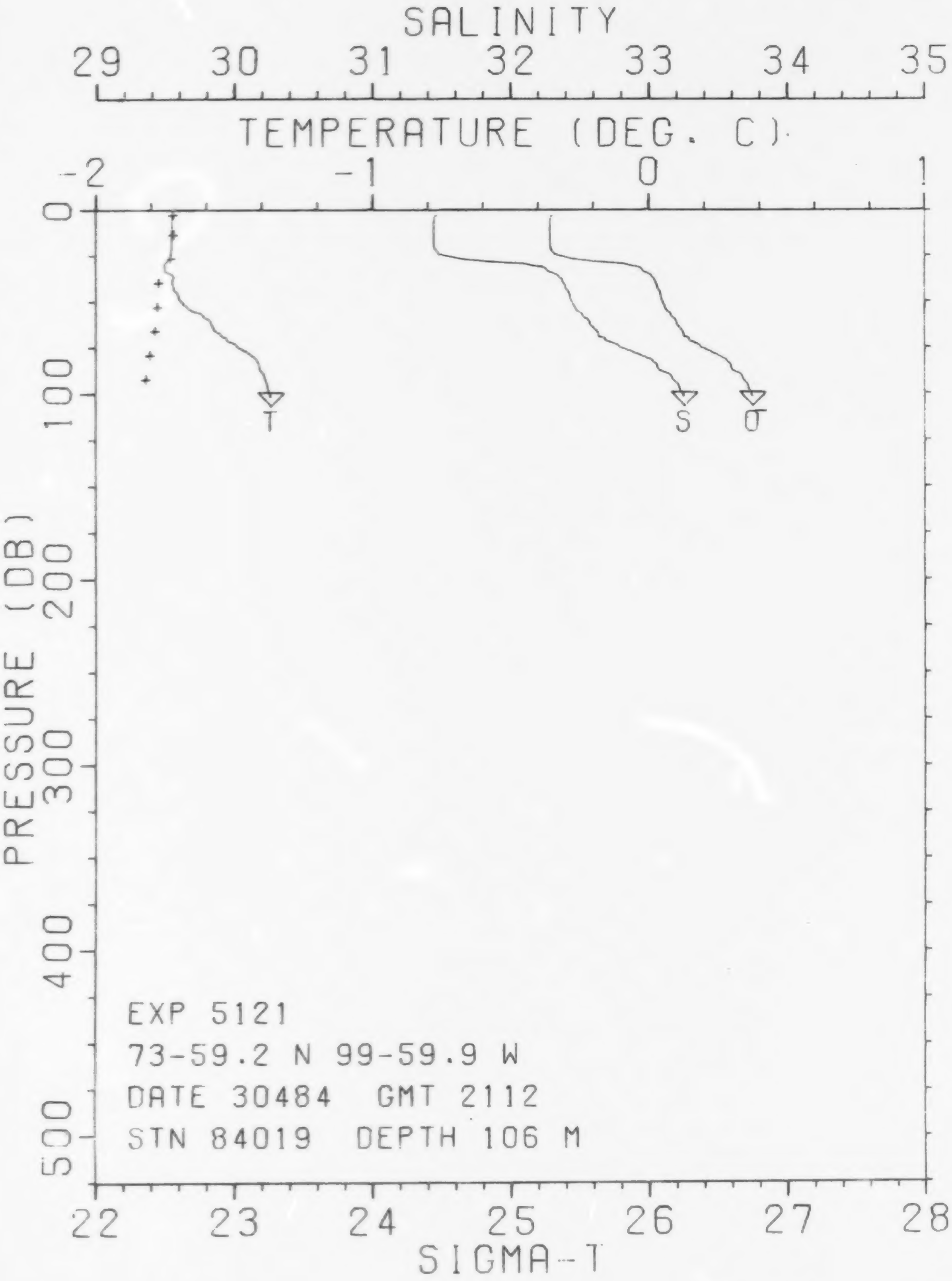
SIGMA-T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PRESSURE (DB)
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EXP 5121
73-59.2 N 99-59.9 W
DATE 30484 GMT 2112
STN 84019 DEPTH 106 M
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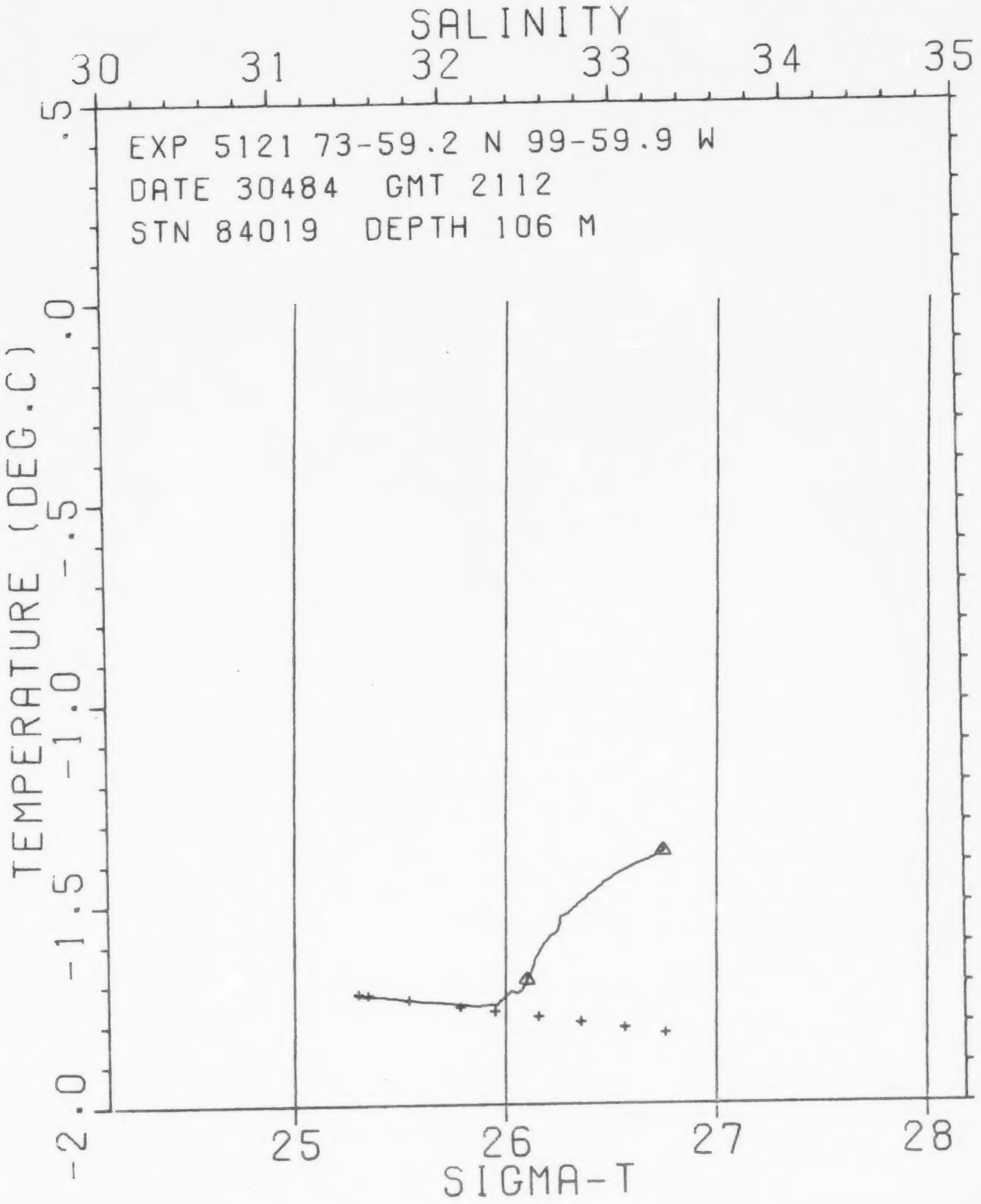
SIGMA-T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EXP 5121 73-59.2 N 99-59.9 W
DATE 30484 GMT 2112
STN 84019 DEPTH 106 M
TEMPERATURE (DEG.C)
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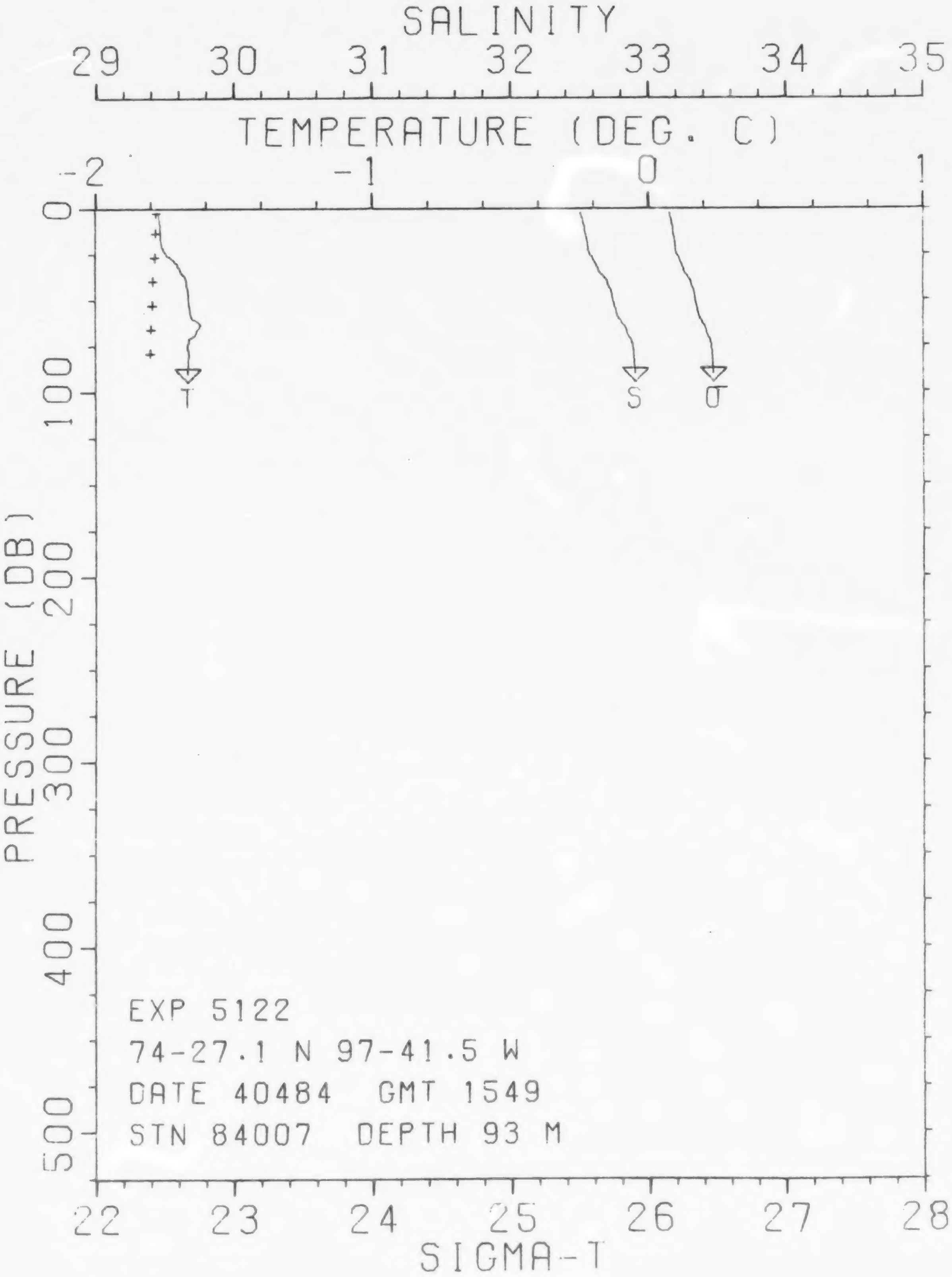
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5122
74-27.1 N 97-41.5 W
DATE 40484 GMT 1549
STN 84007 DEPTH 93 M
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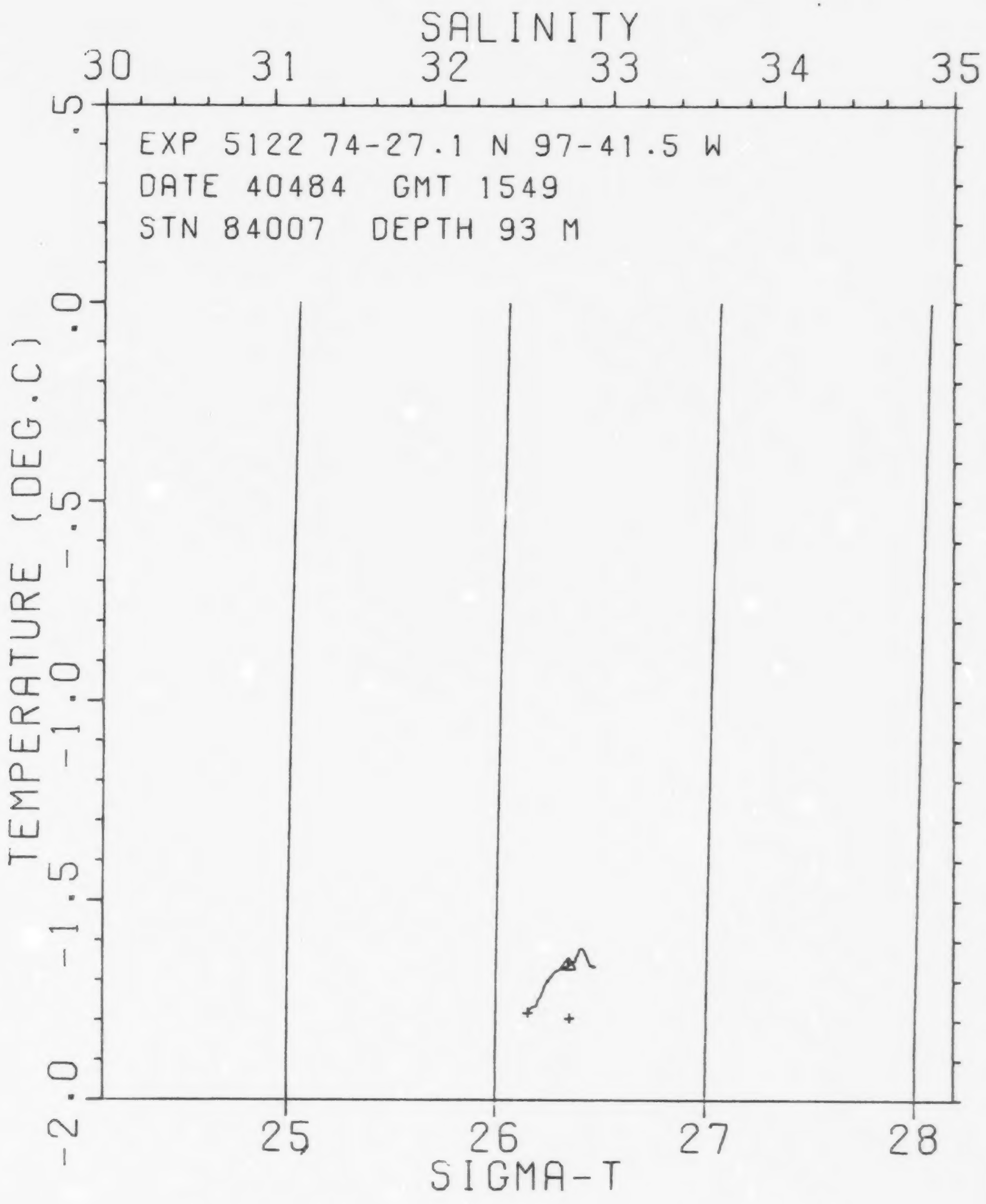
SIGMA-T


SALINITY
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EXP 5122 74-27.1 N 97-41.5 W
DATE 40484 GMT 1549
STN 84007 DEPTH 93 M
TEMPERATURE (DEG.C)
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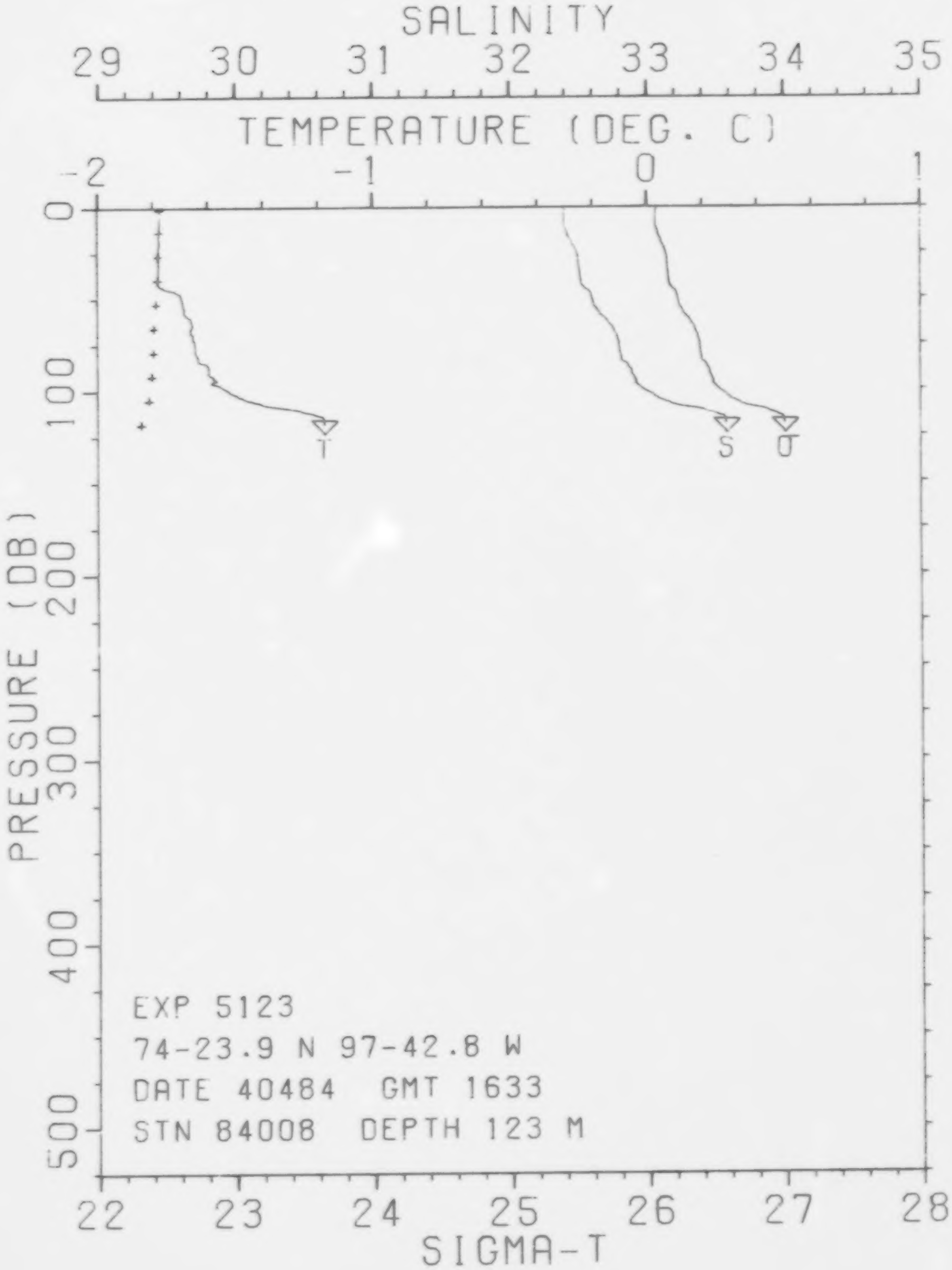
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PRESSURE (DB)
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EXP 5123
74-23.9 N 97-42.8 W
DATE 40484 GMT 1633
STN 84008 DEPTH 123 M
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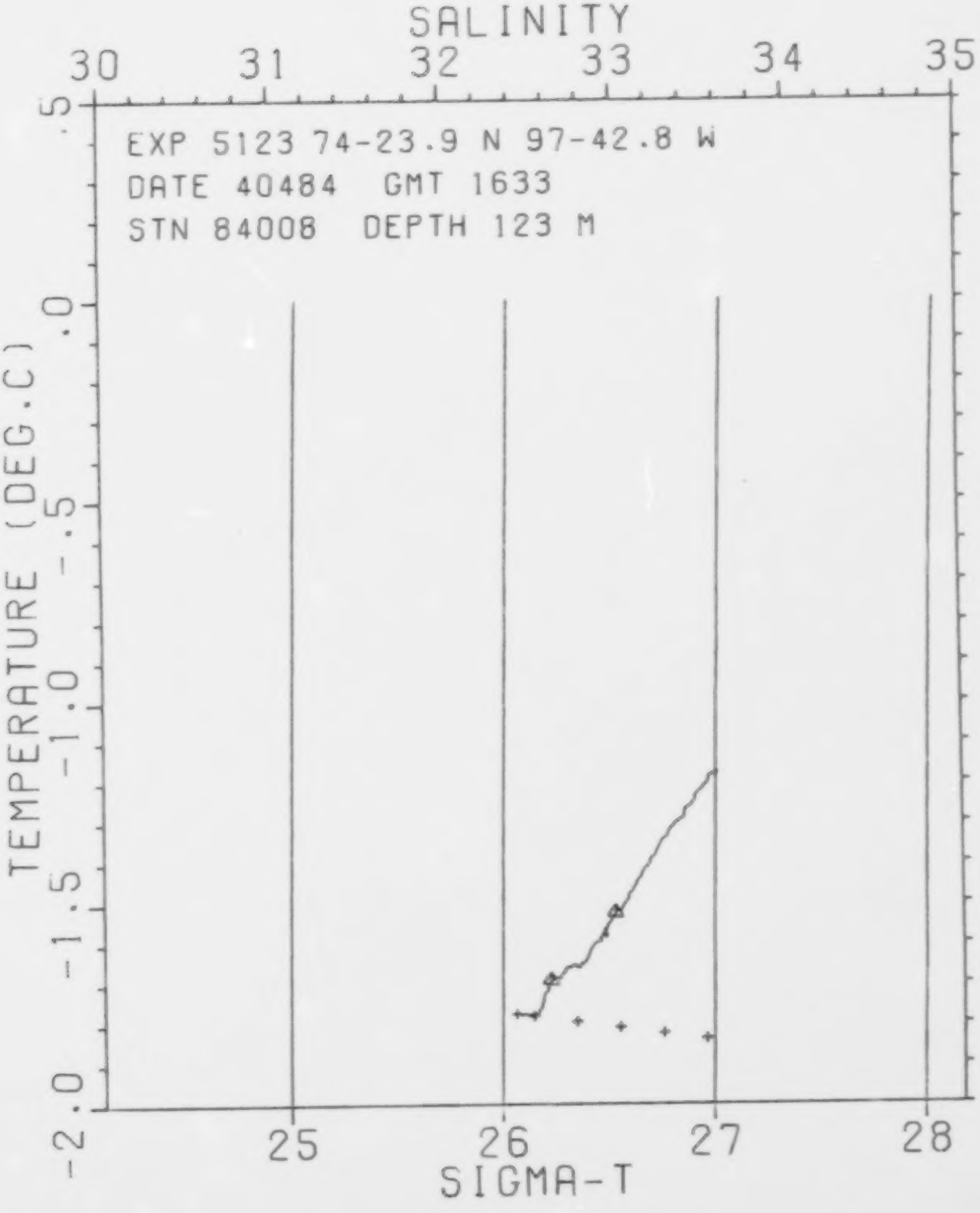
SIGMA-T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DATE 40484 GMT 1633
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TEMPERATURE (DEG.C)
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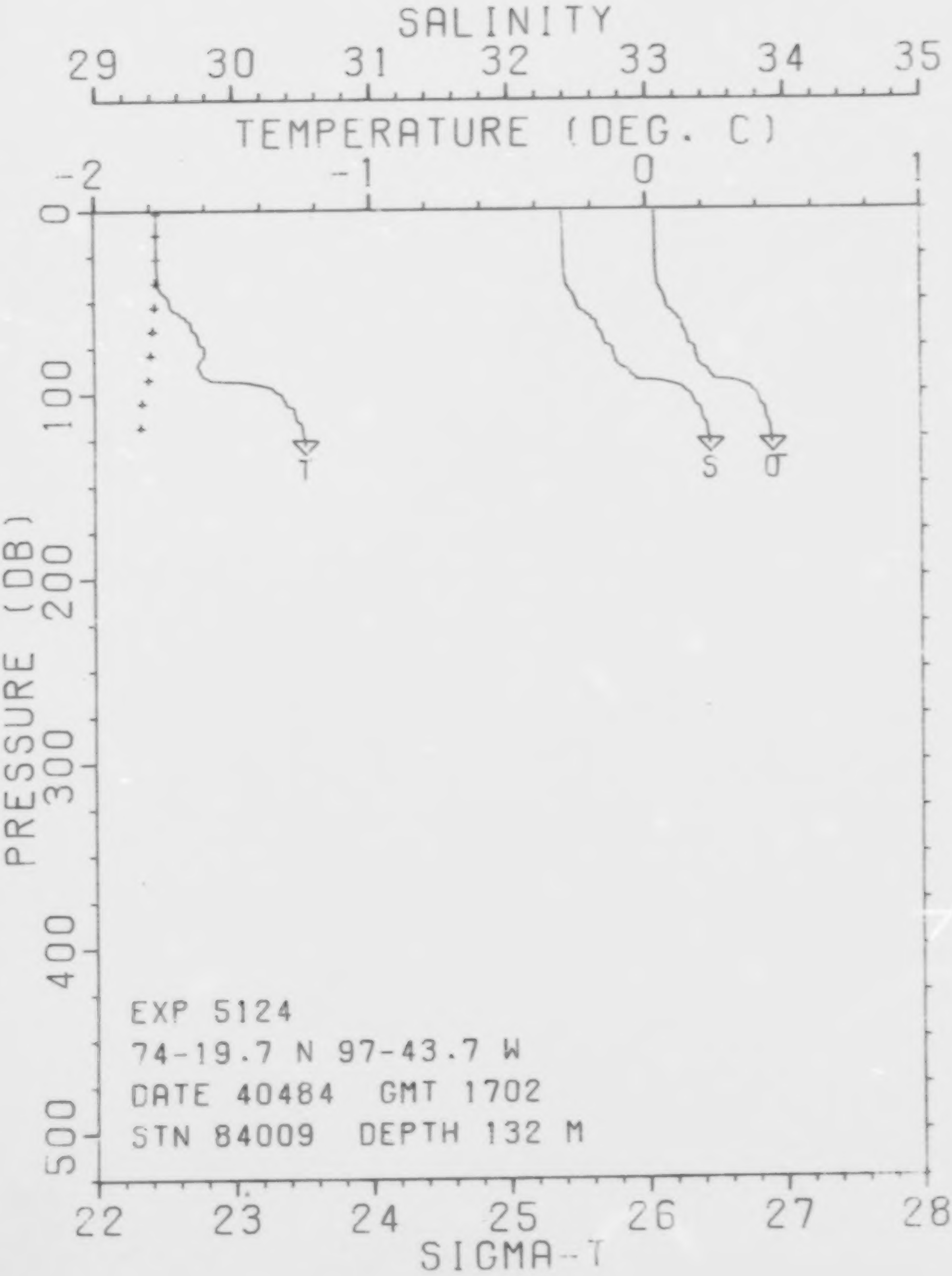
SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5124
74-19.7 N 97-43.7 W
DATE 40484 GMT 1702
STN 84009 DEPTH 132 M
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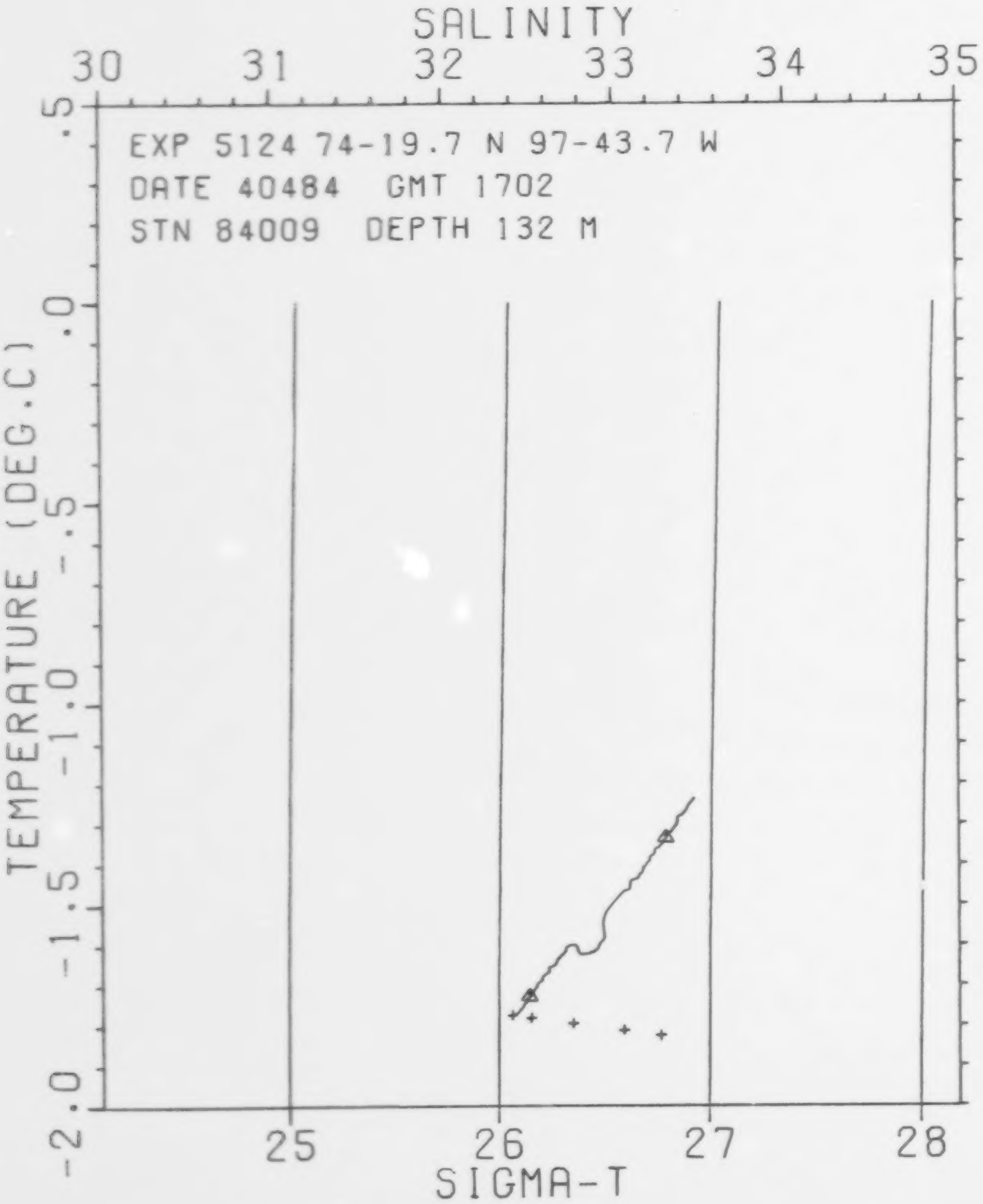
SIGMA-T


SALINITY
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EXP 5124 74-19.7 N 97-43.7 W
DATE 40484 GMT 1702
STN 84009 DEPTH 132 M
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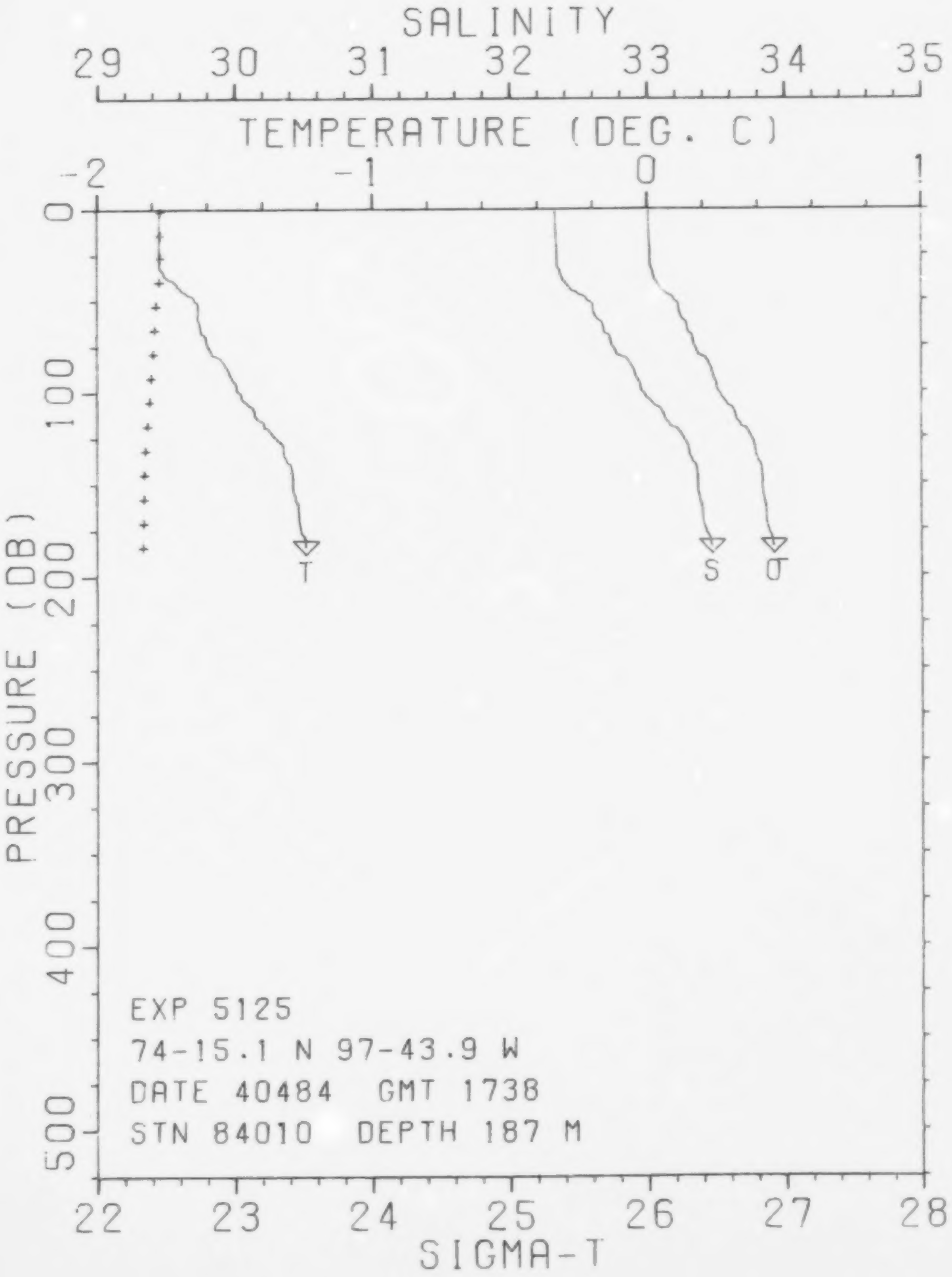
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5125
74-15.1 N 97-43.9 W
DATE 40484 GMT 1738
STN 84010 DEPTH 187 M
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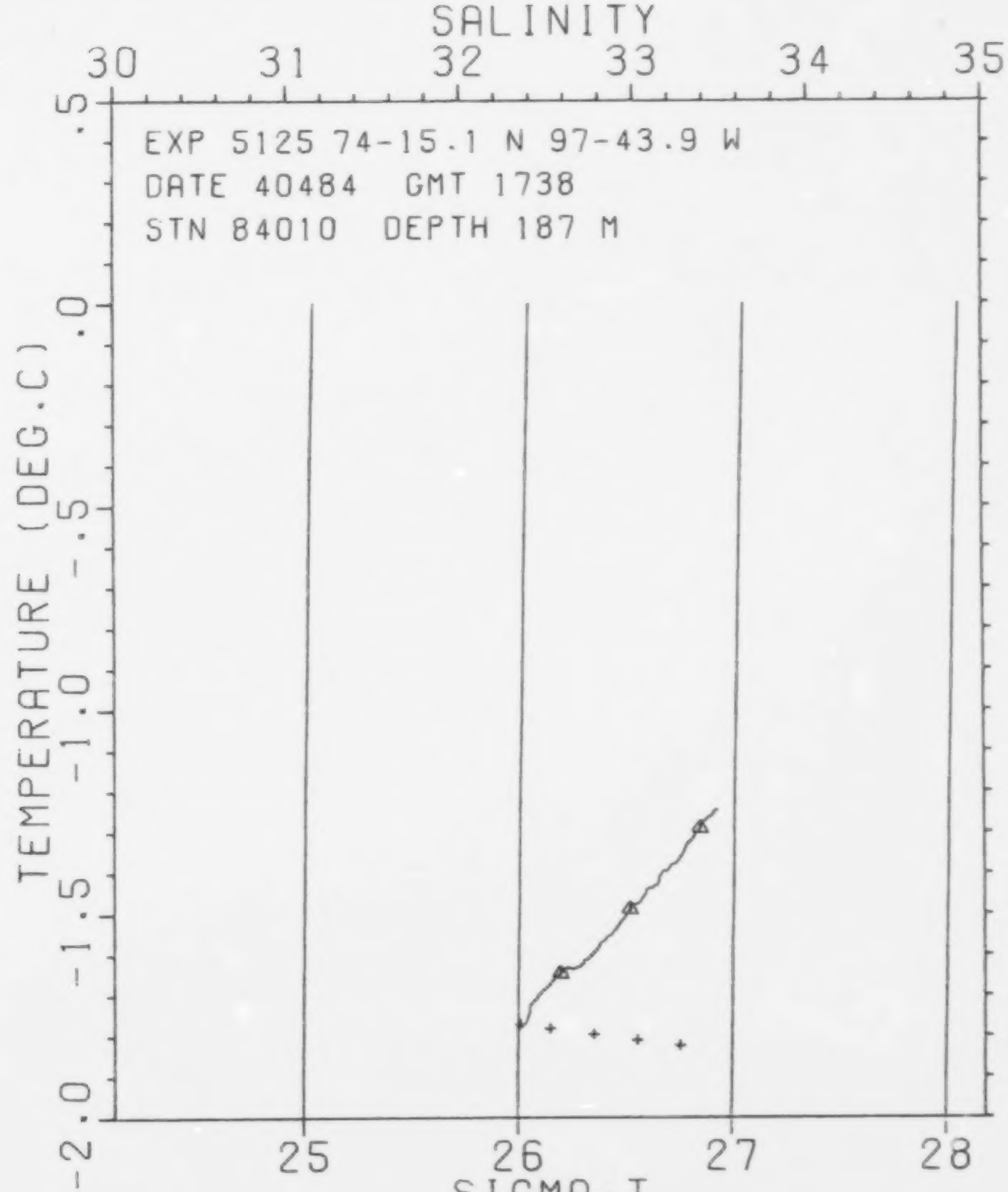
SIGMA-T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EXP 5125 74-15.1 N 97-43.9 W
DATE 40484 GMT 1738
STN 84010 DEPTH 187 M
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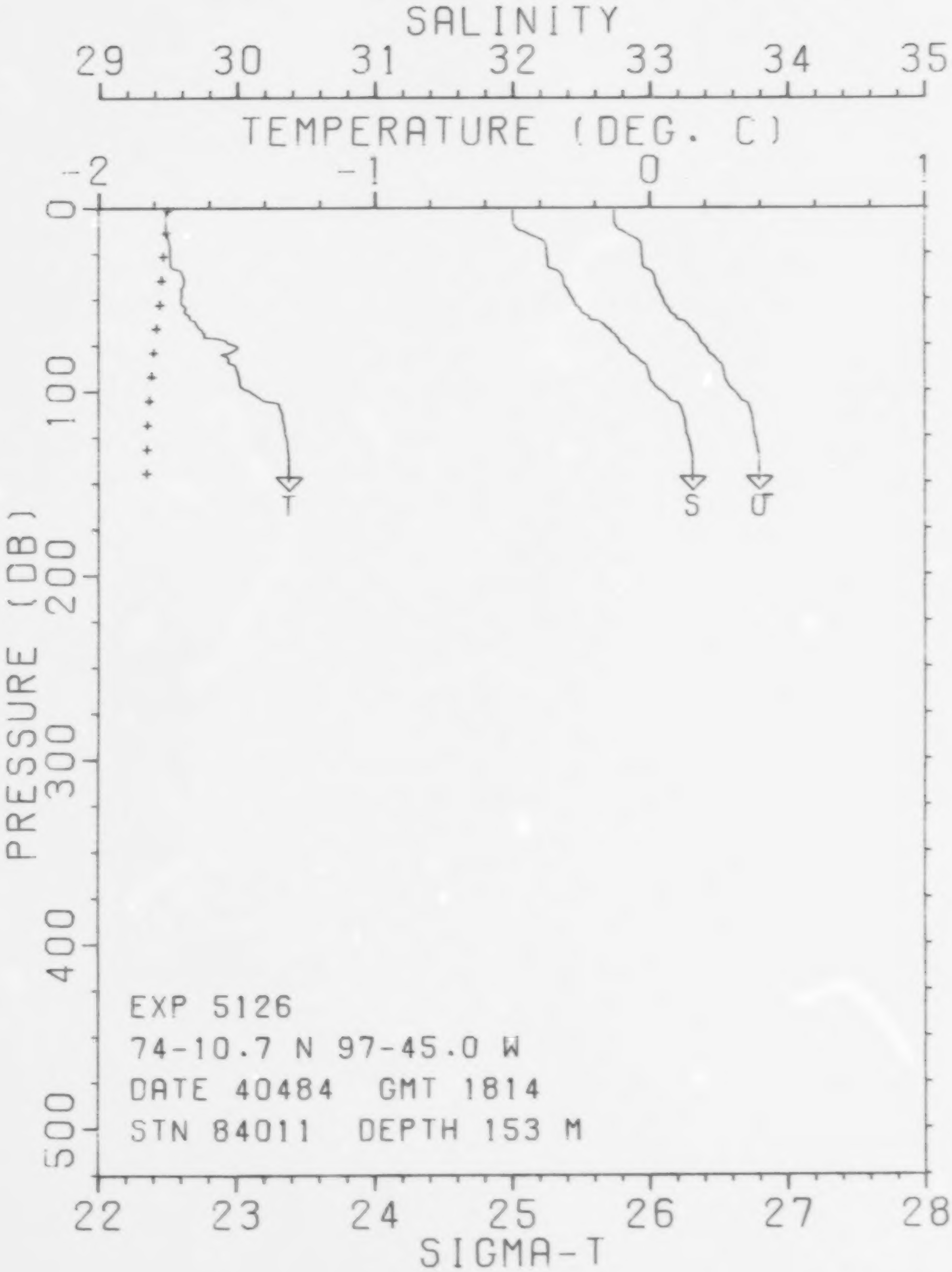
SIGMA-T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PRESSURE (DB)
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EXP 5126
74-10.7 N 97-45.0 W
DATE 40484 GMT 1814
STN 84011 DEPTH 153 M
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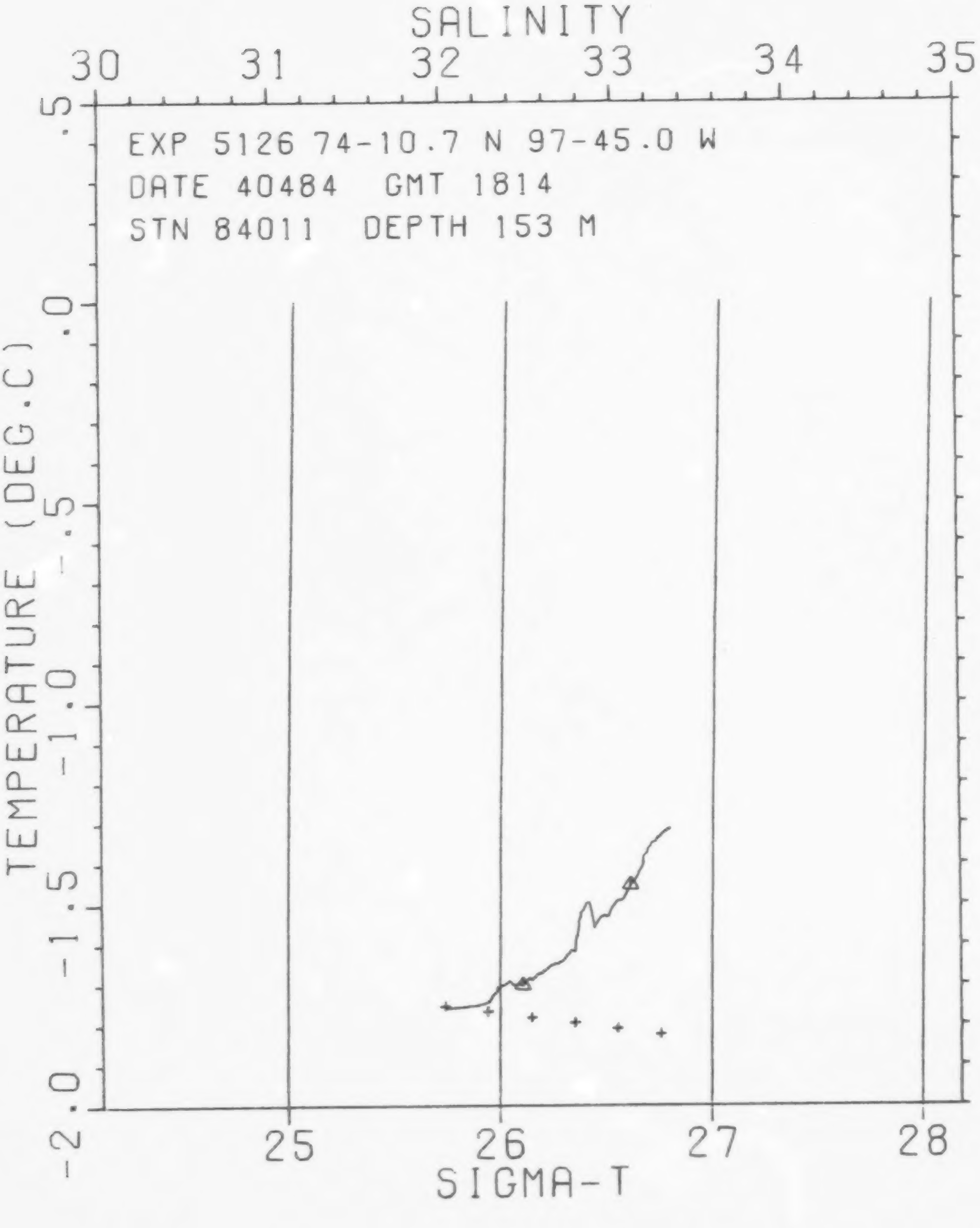
SIGMA-T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EXP 5126 74-10.7 N 97-45.0 W
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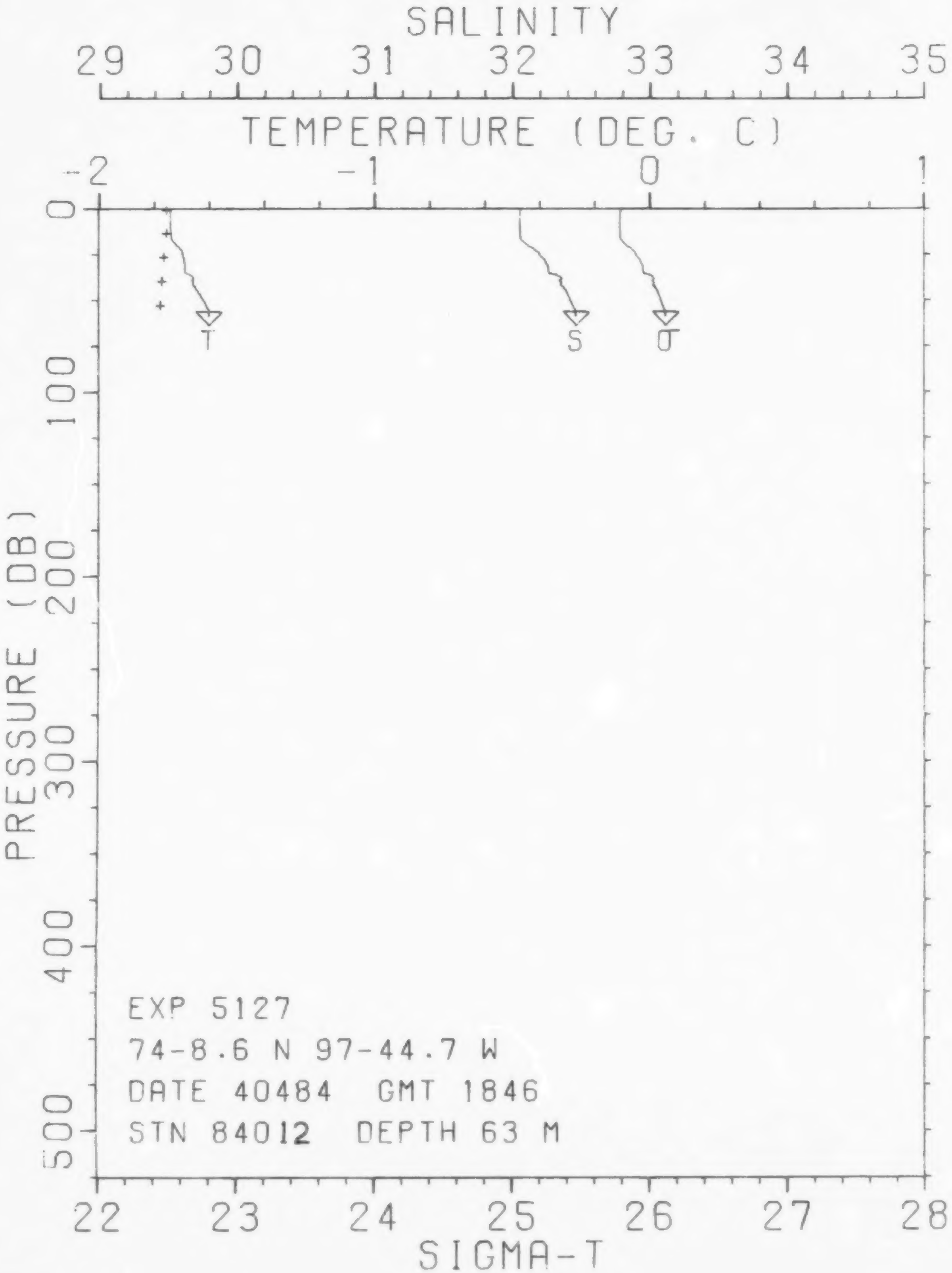
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5127
74-8.6 N 97-44.7 W
DATE 40484 GMT 1846
STN 84012 DEPTH 63 M
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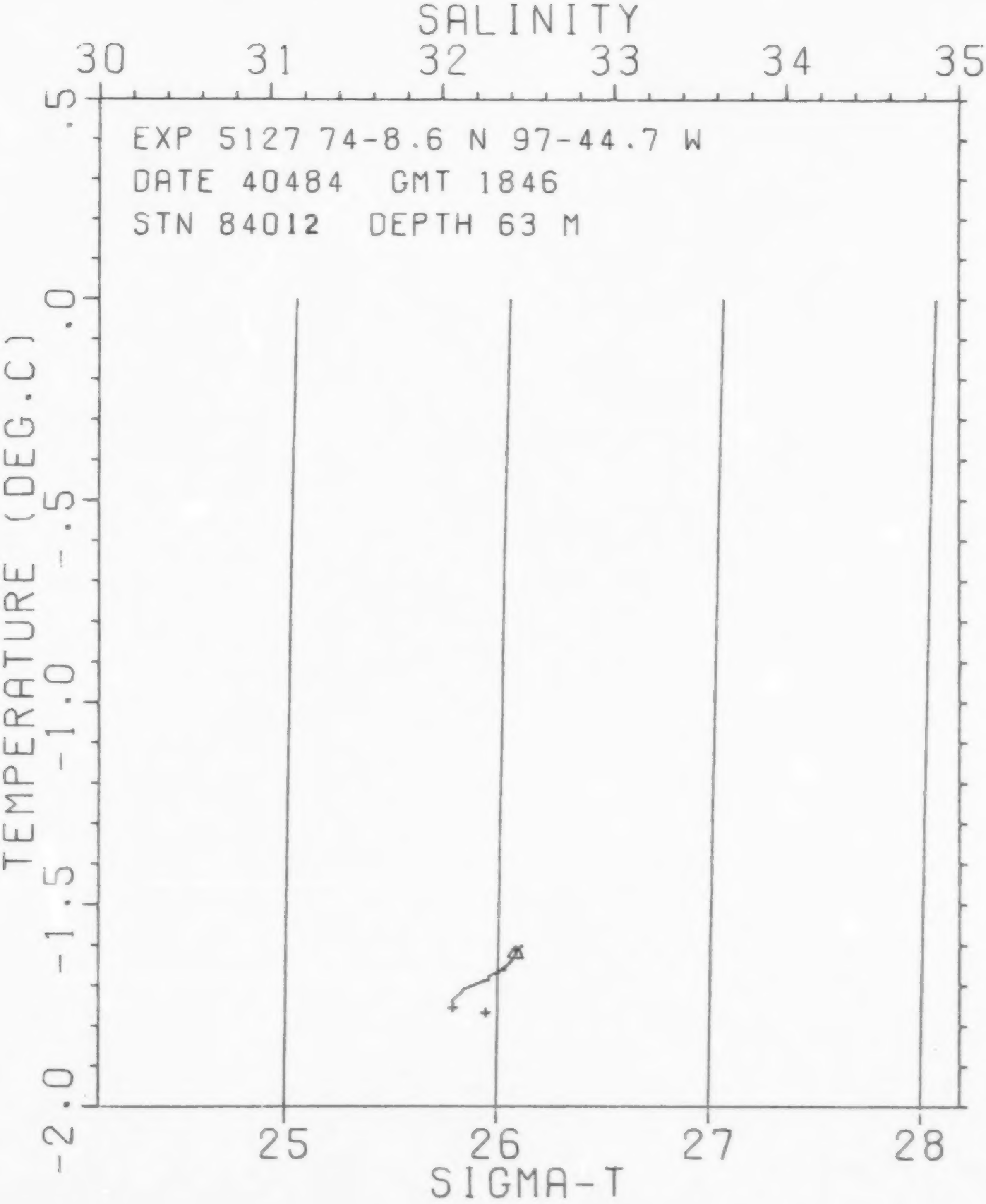
SIGMA-T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EXP 5127 74-8.6 N 97-44.7 W
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STN 84012 DEPTH 63 M
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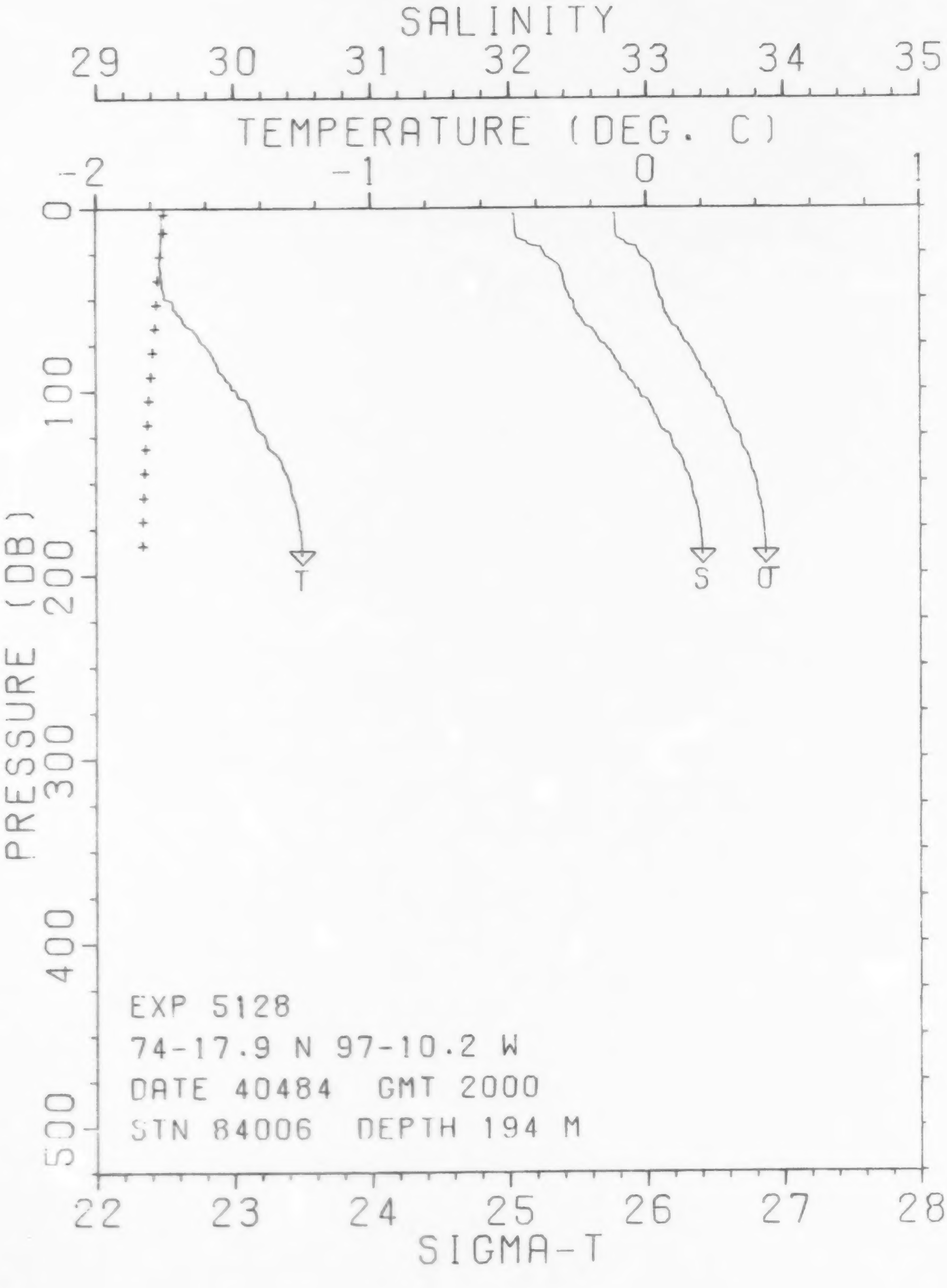
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5128
74-17.9 N 97-10.2 W
DATE 40484 GMT 2000
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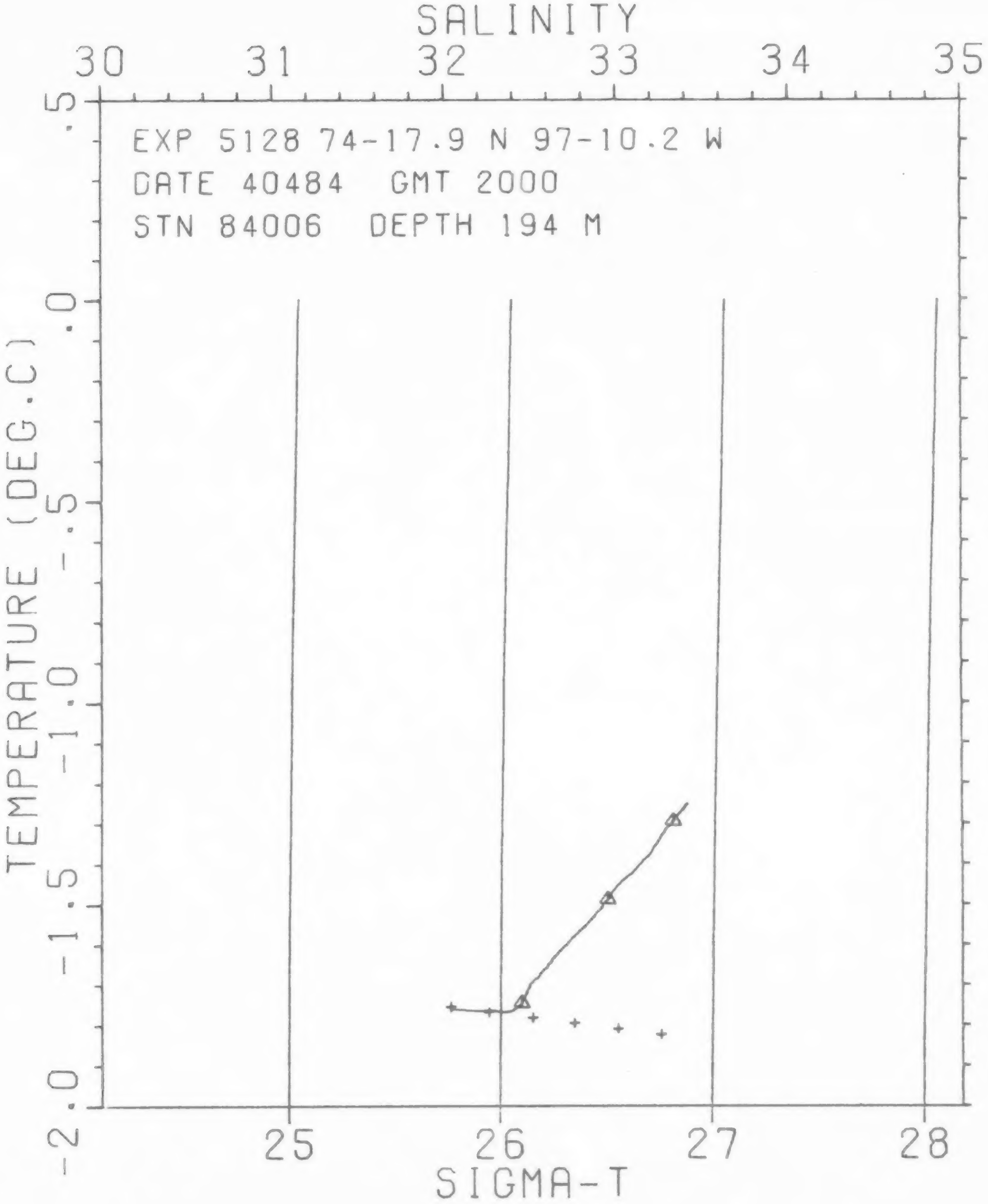
SIGMA-T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EXP 5128 74-17.9 N 97-10.2 W
DATE 40484 GMT 2000
STN 84006 DEPTH 194 M
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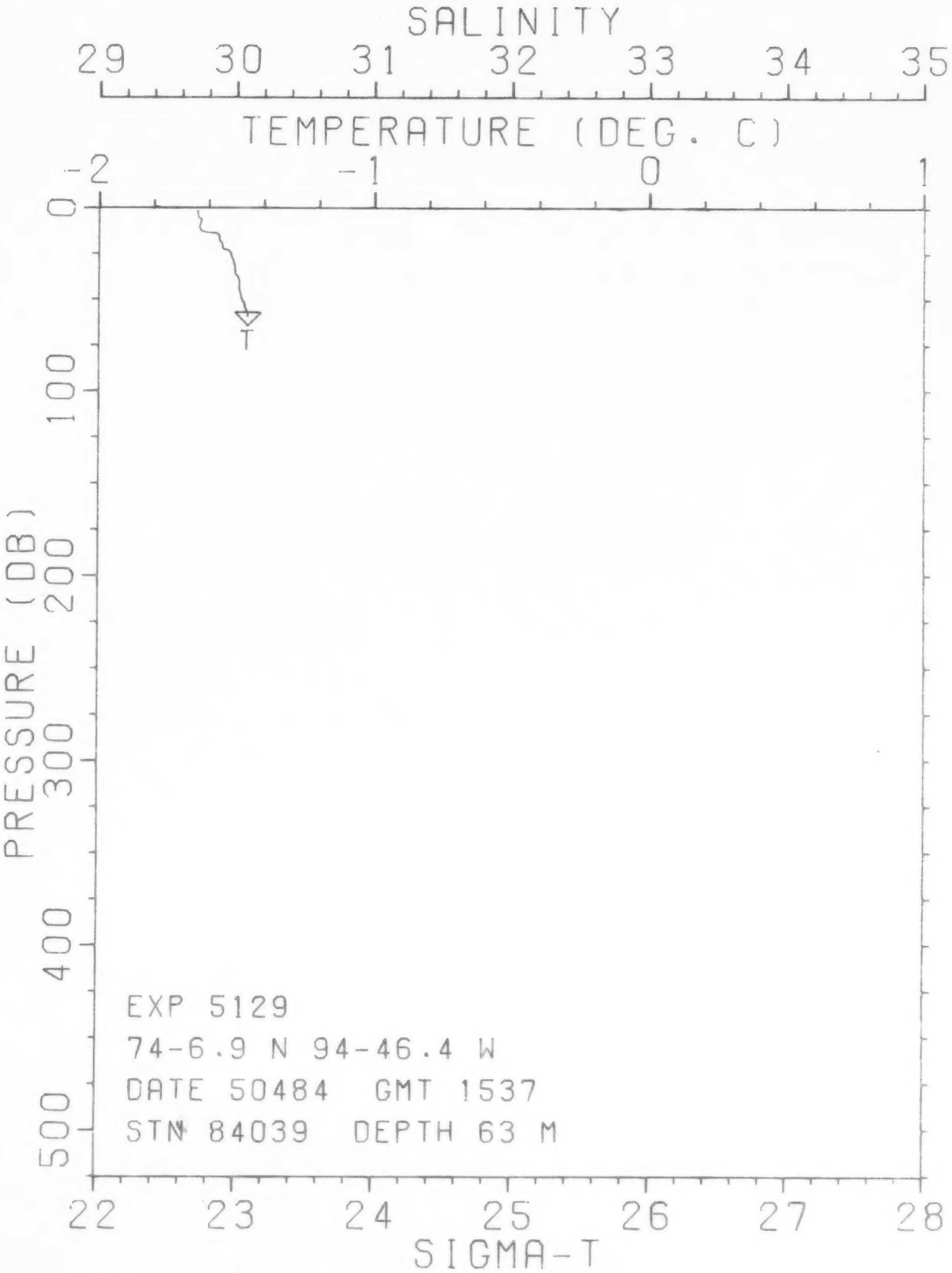
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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100
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EXP 5129
74-6.9 N 94-46.4 W
DATE 50484 GMT 1537
STN 84039 DEPTH 63 M
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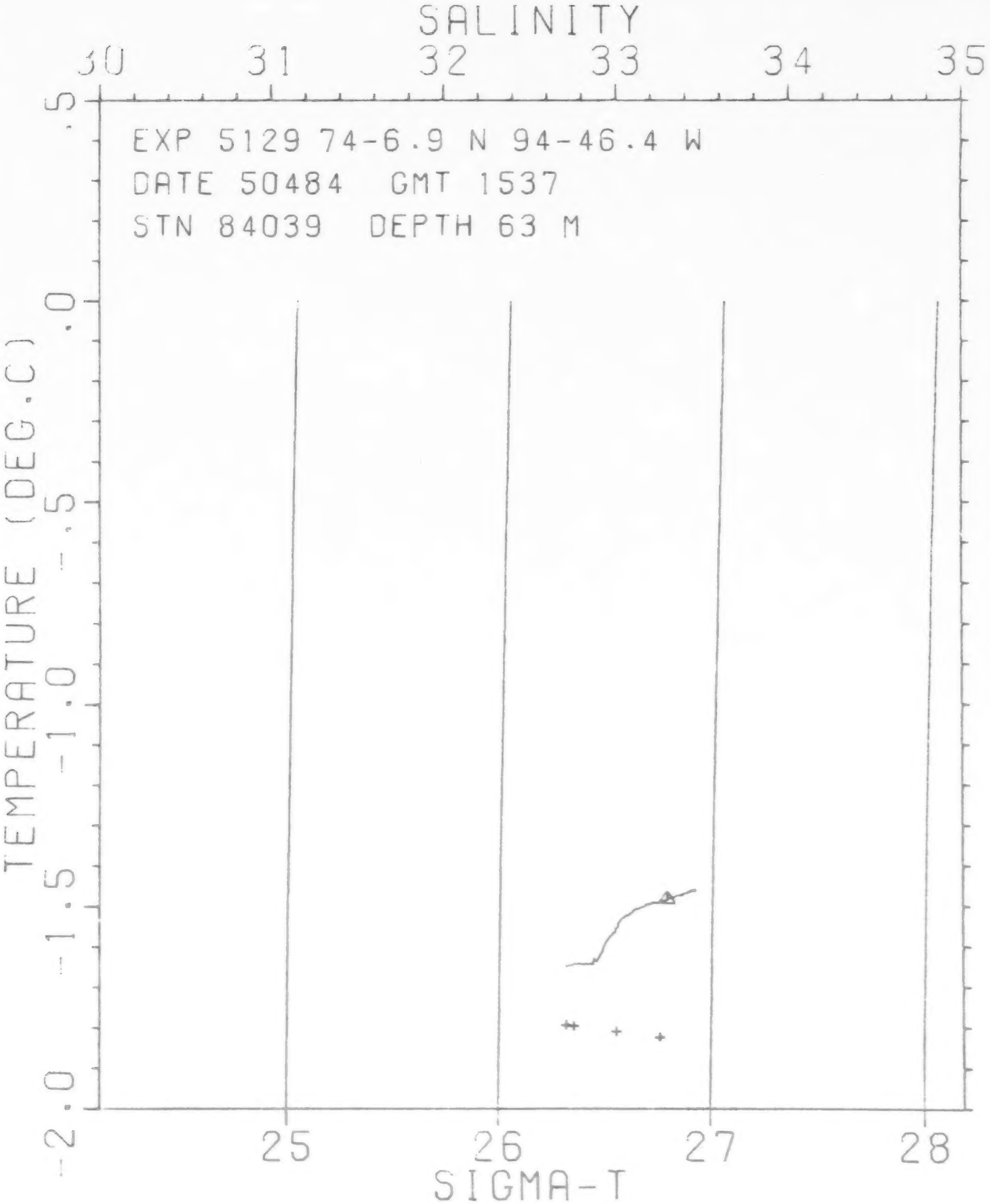
SIGMA-T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EXP 5129 74-6.9 N 94-46.4 W
DATE 50484 GMT 1537
STN 84039 DEPTH 63 M
TEMPERATURE (DEG.C)
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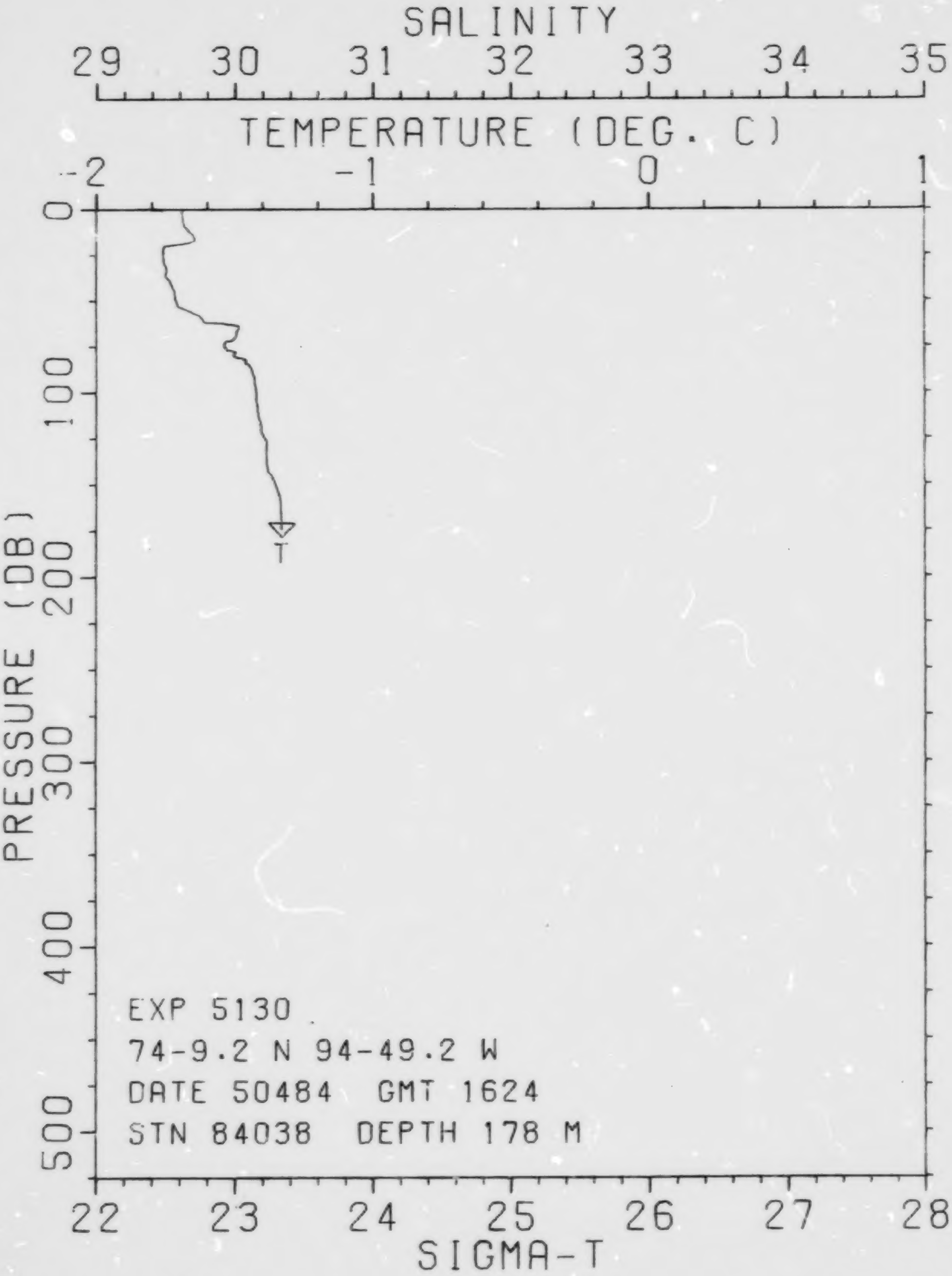
SIGMA-T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PRESSURE (DB)
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74-9.2 N 94-49.2 W
DATE 50484 GMT 1624
STN 84038 DEPTH 178 M
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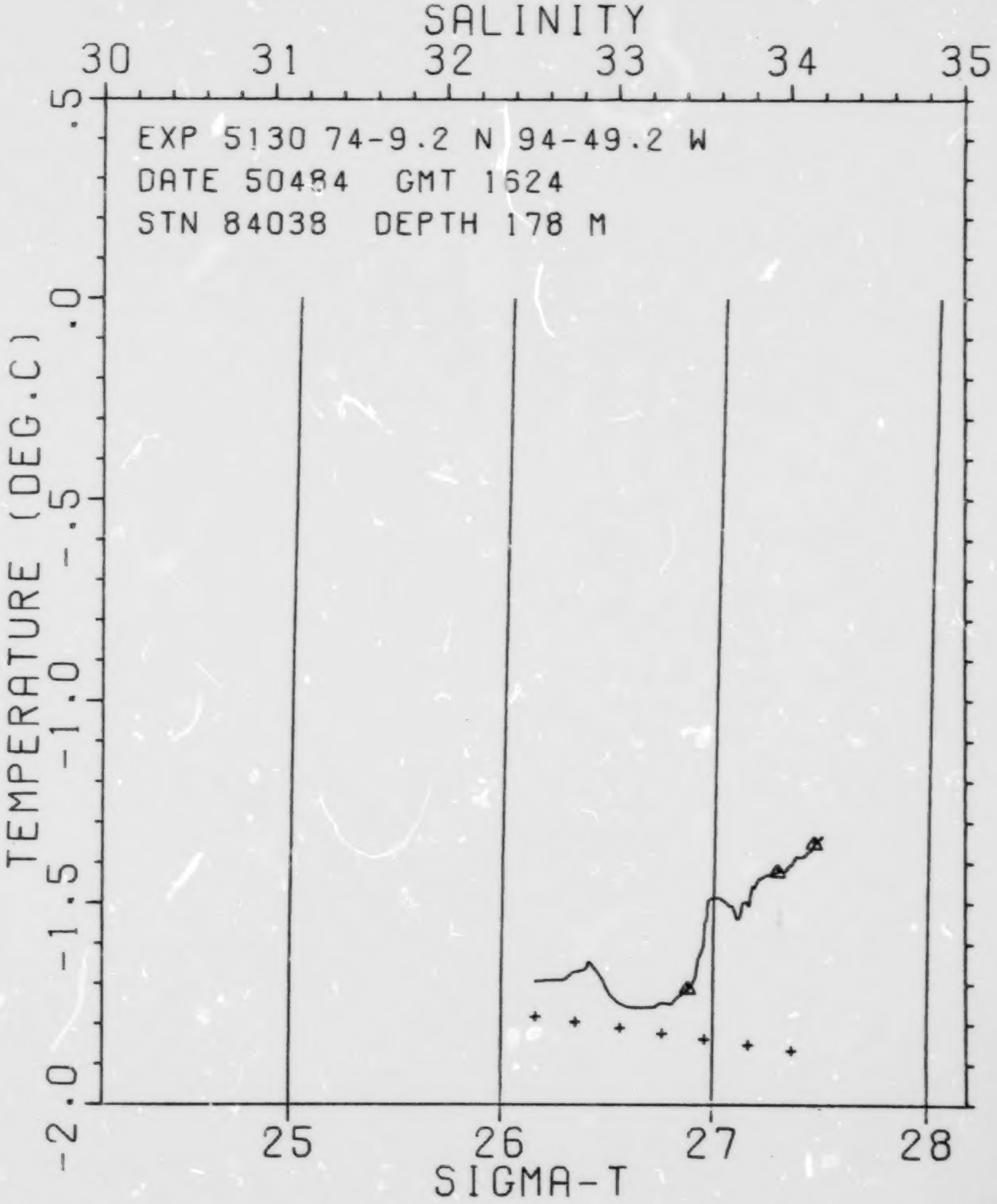
SIGMA-T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EXP 5130 74-9.2 N 94-49.2 W
DATE 50484 GMT 1624
STN 84038 DEPTH 178 M
TEMPERATURE (DEG.C)
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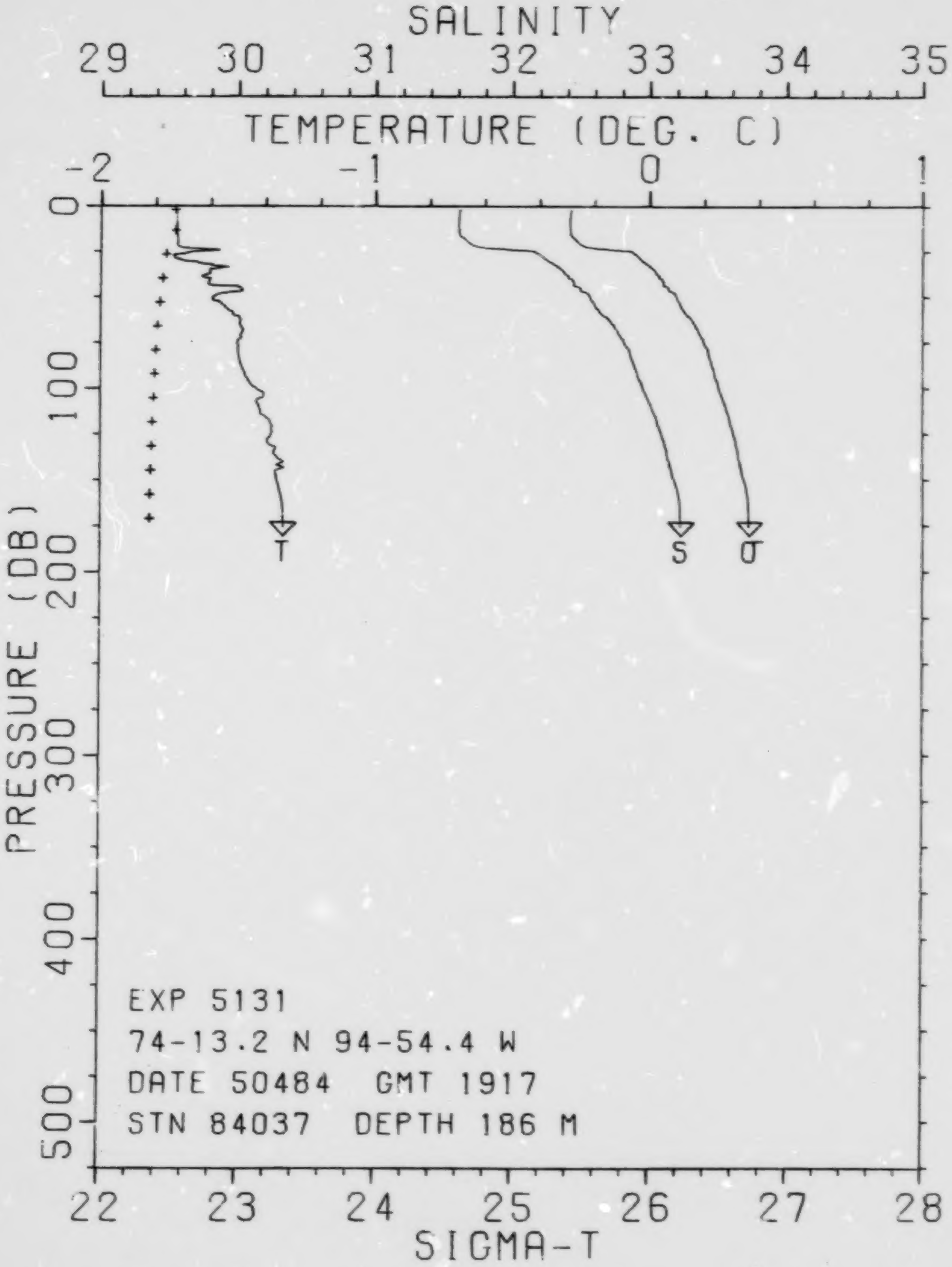
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5131
74-13.2 N 94-54.4 W
DATE 50484 GMT 1917
STN 84037 DEPTH 186 M
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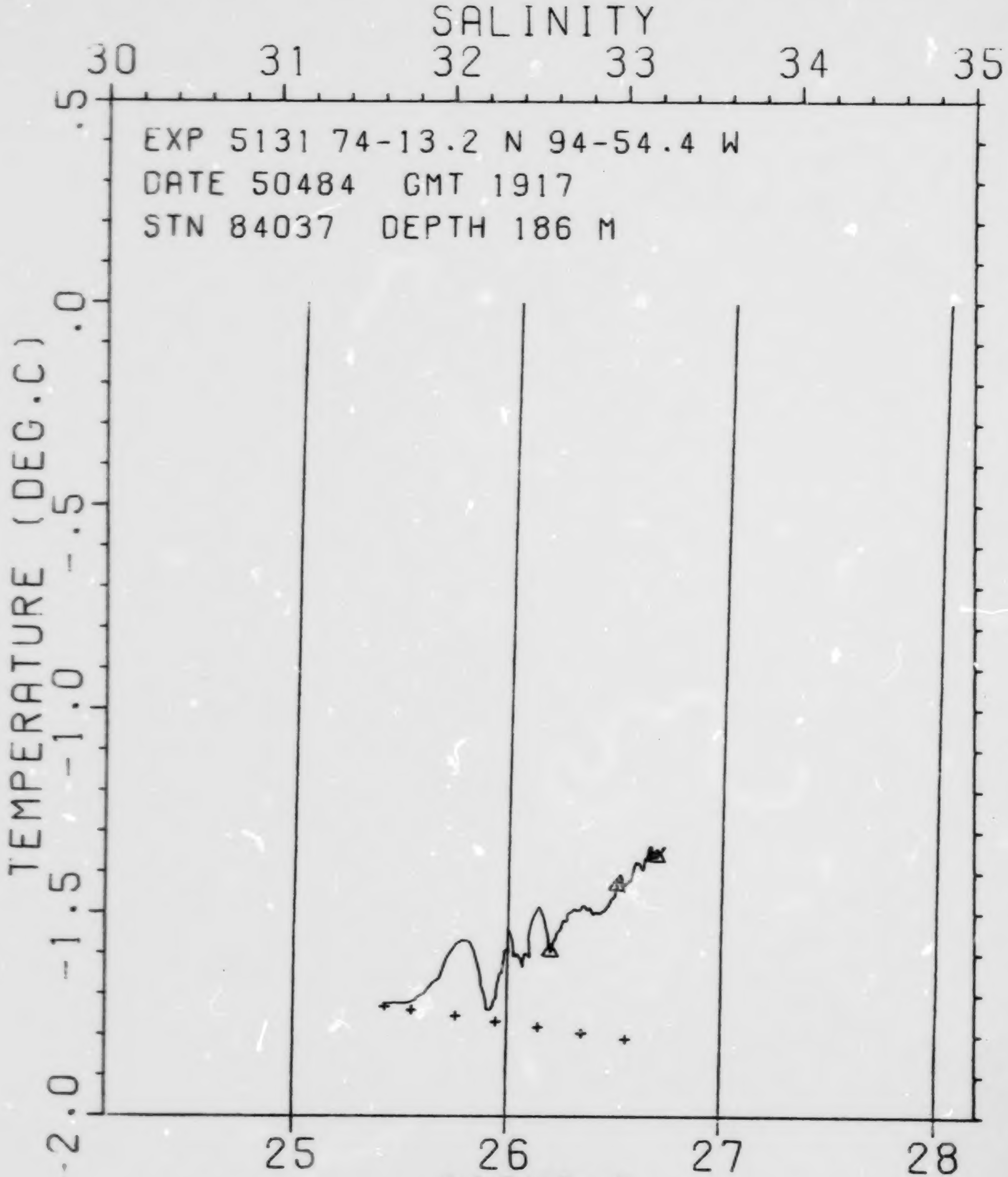
SIGMA-T


SALINITY
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EXP 5131 74-13.2 N 94-54.4 W
DATE 50484 GMT 1917
STN 84037 DEPTH 186 M
TEMPERATURE (DEG.C)
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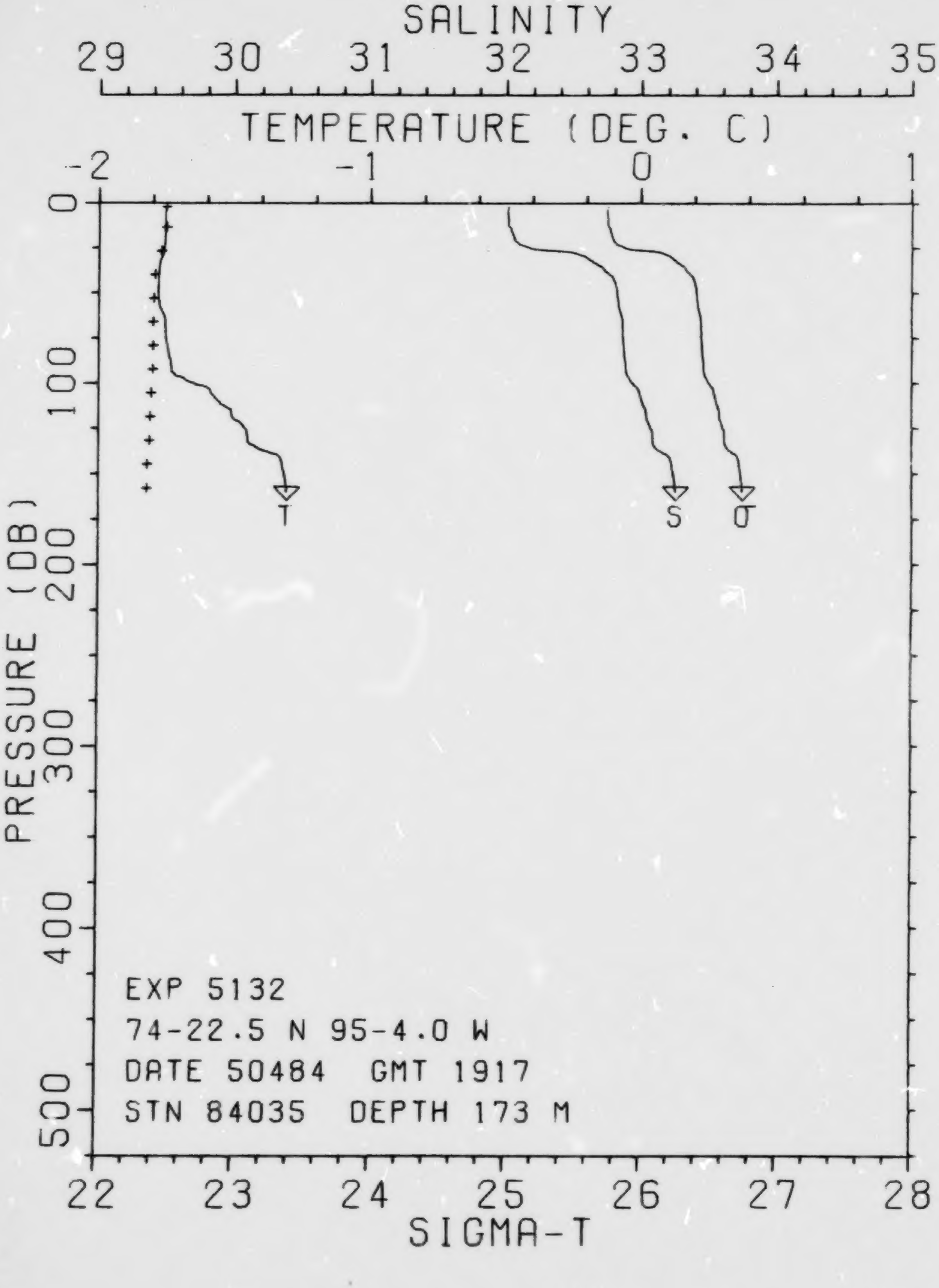
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5132
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DATE 50484 GMT 1917
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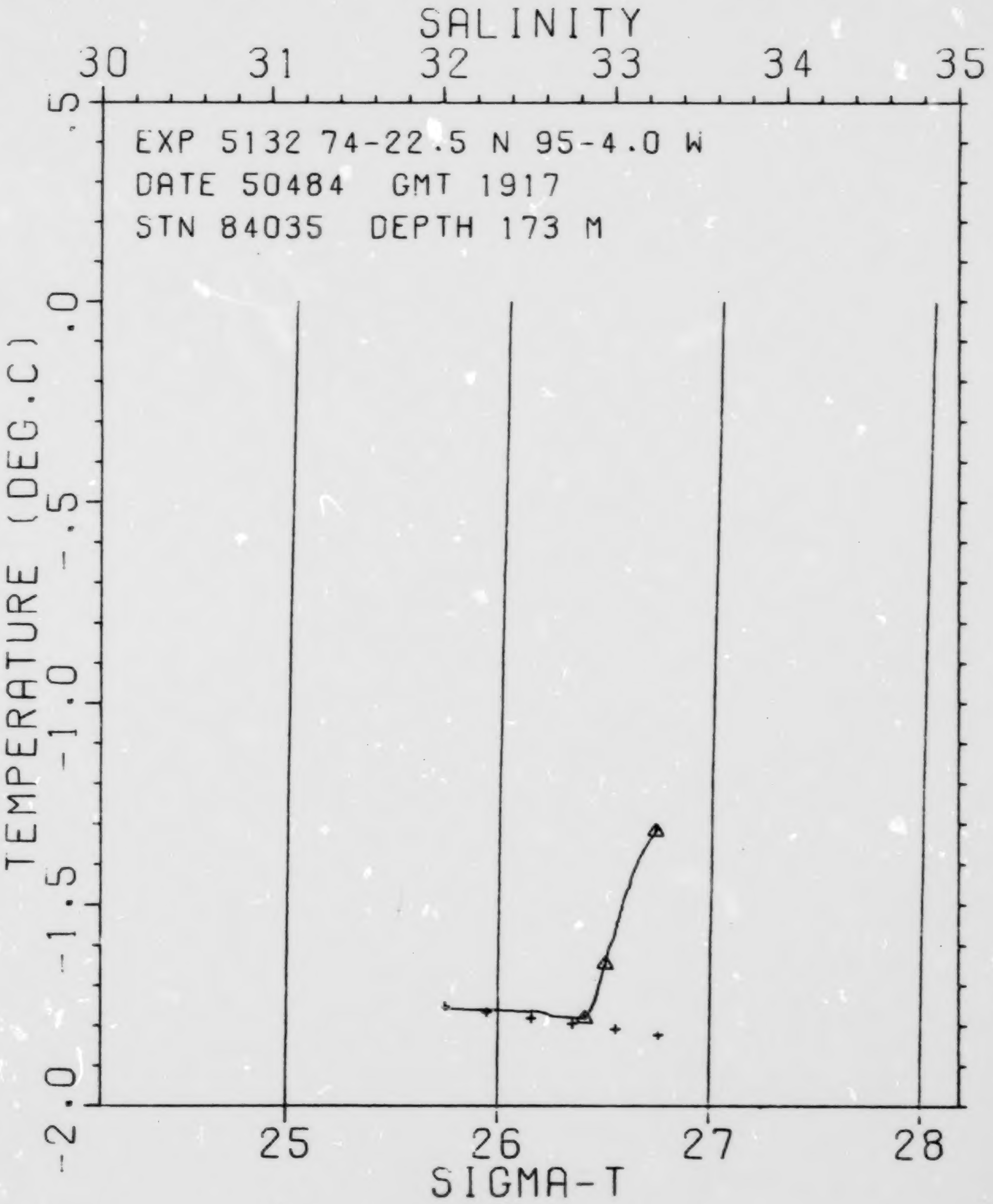
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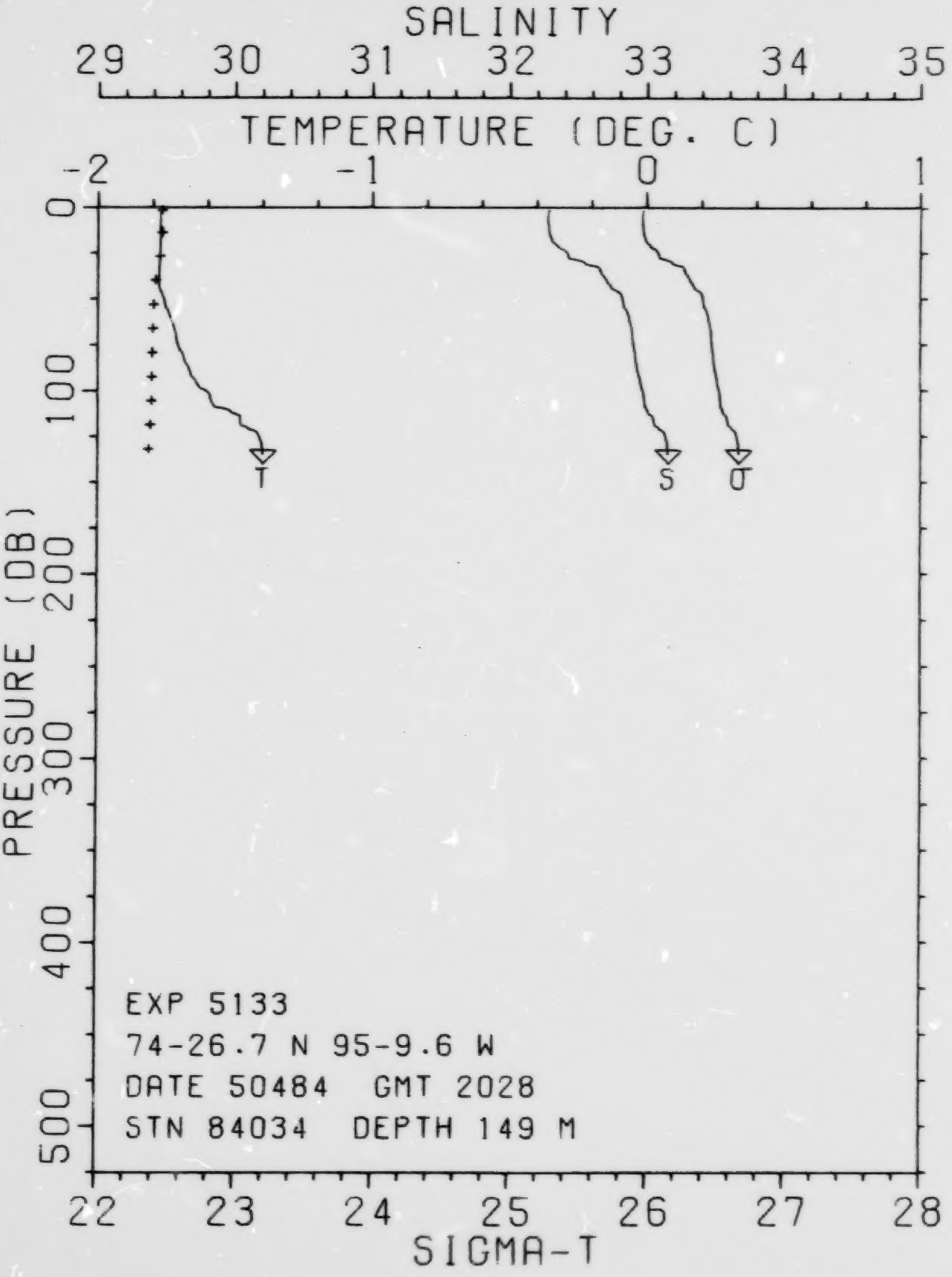
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PRESSURE (DB)
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400
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EXP 5133
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DATE 50484 GMT 2028
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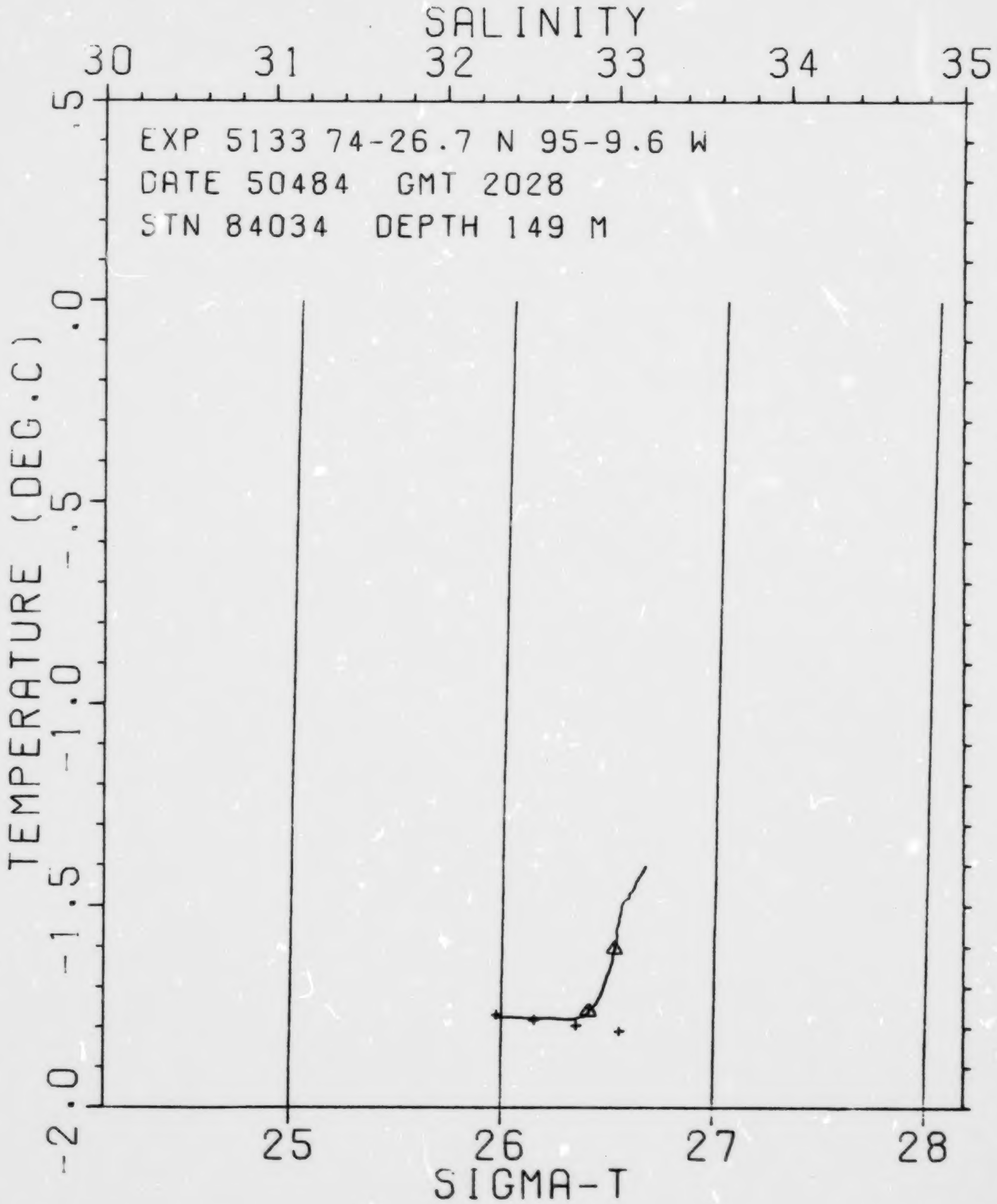
SIGMA-T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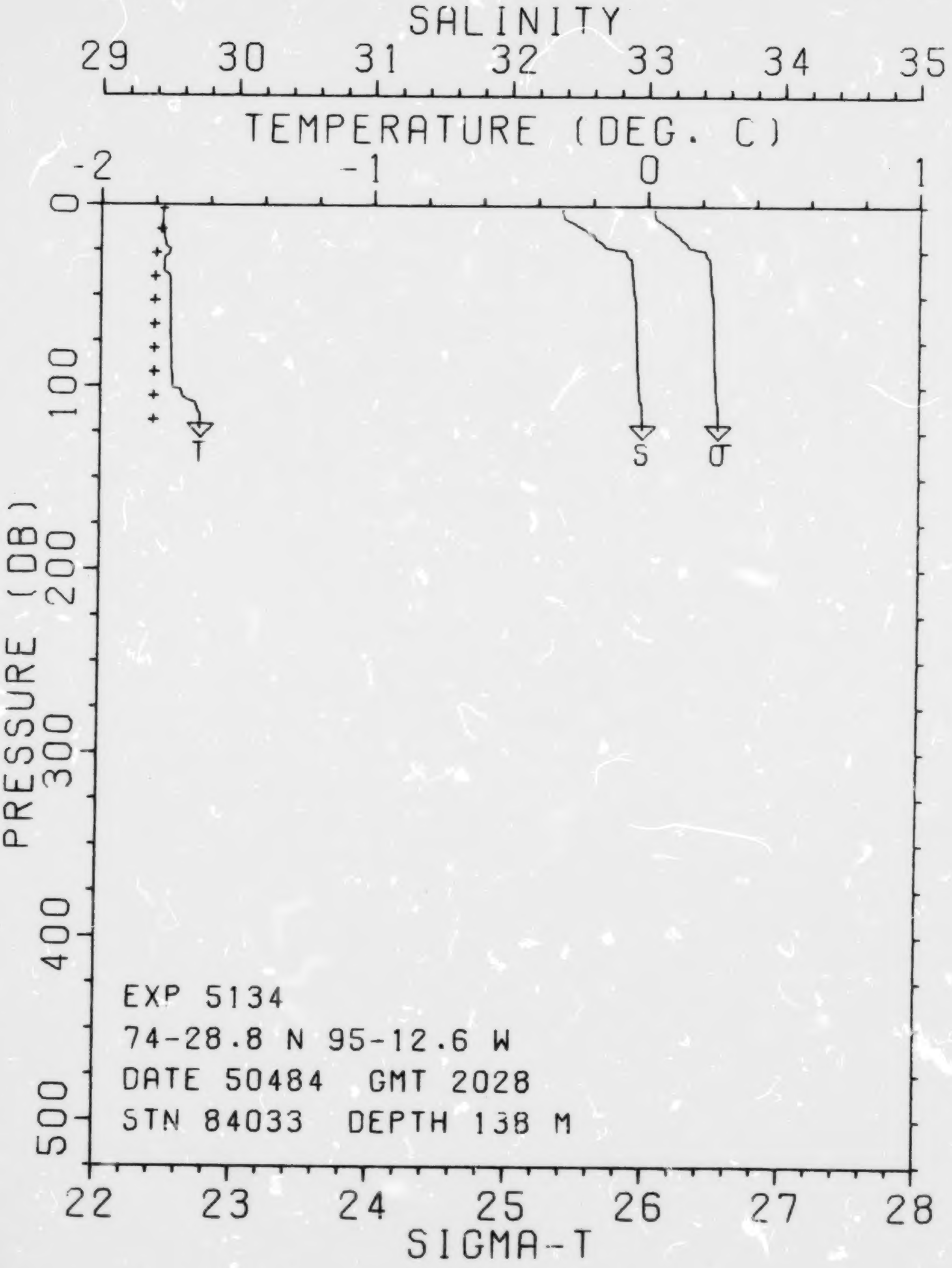
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EXP 5134
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DATE 50484 GMT 2028
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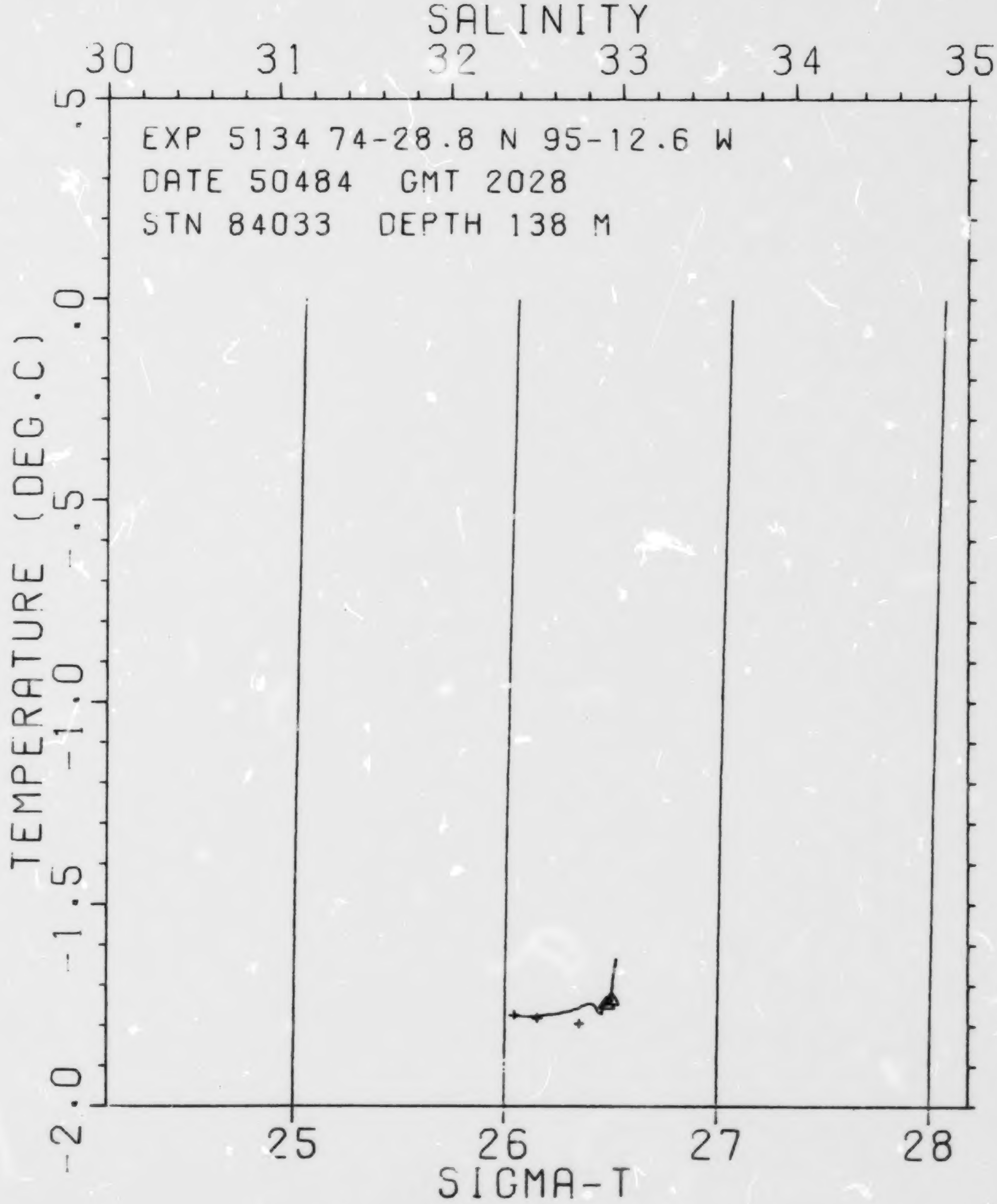
SIGMA-T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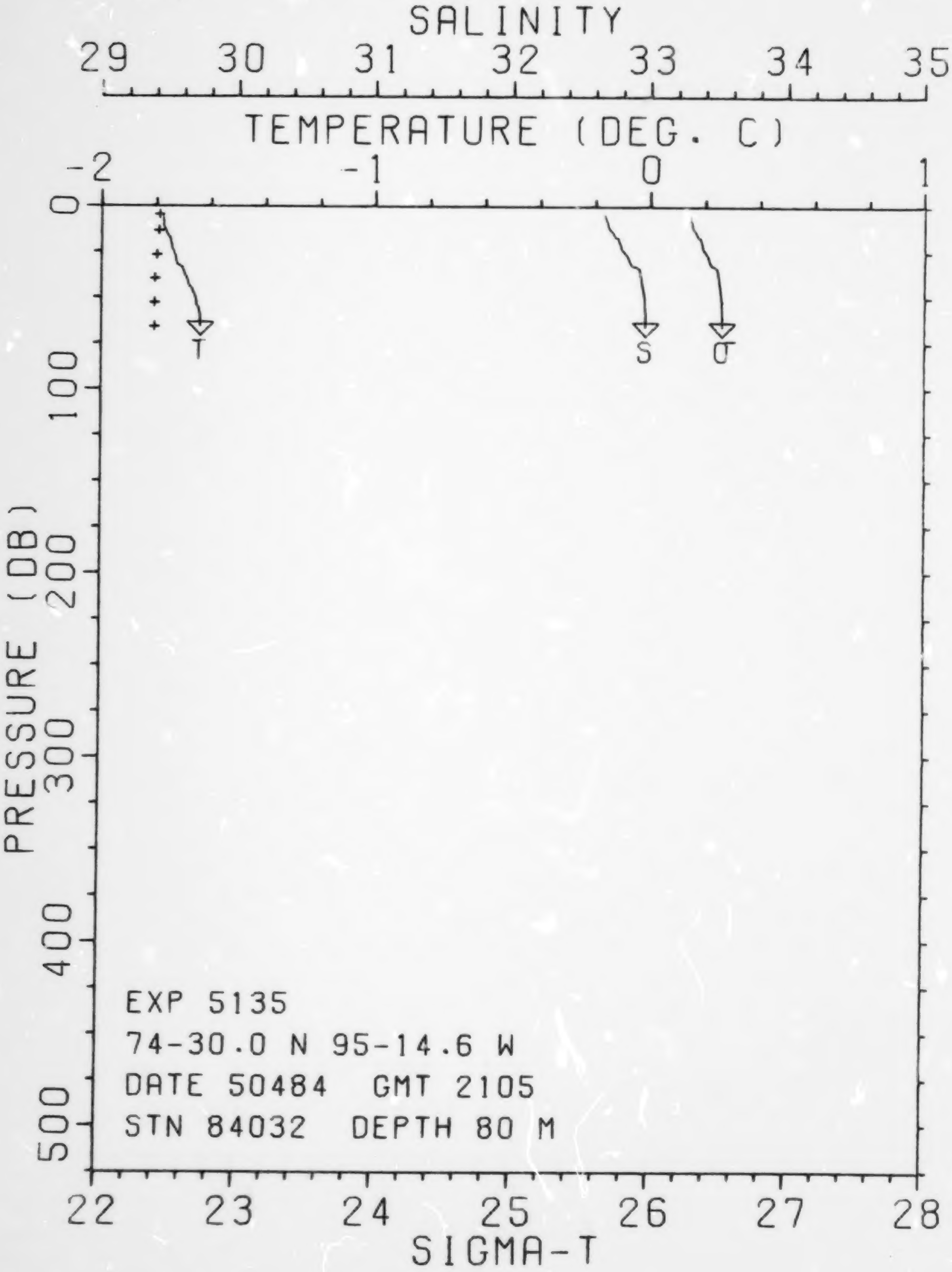
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EXP 5135
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DATE 50484 GMT 2105
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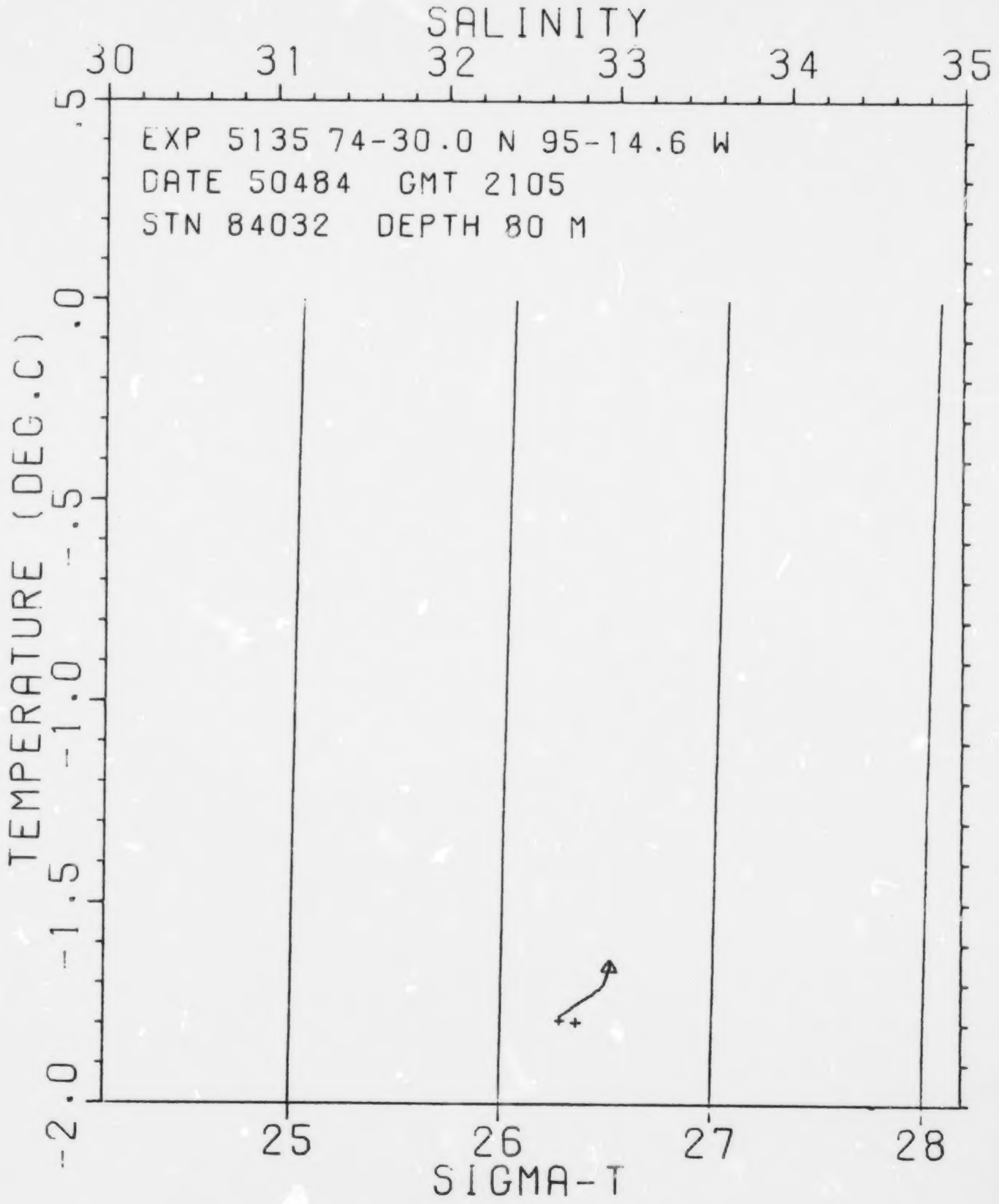
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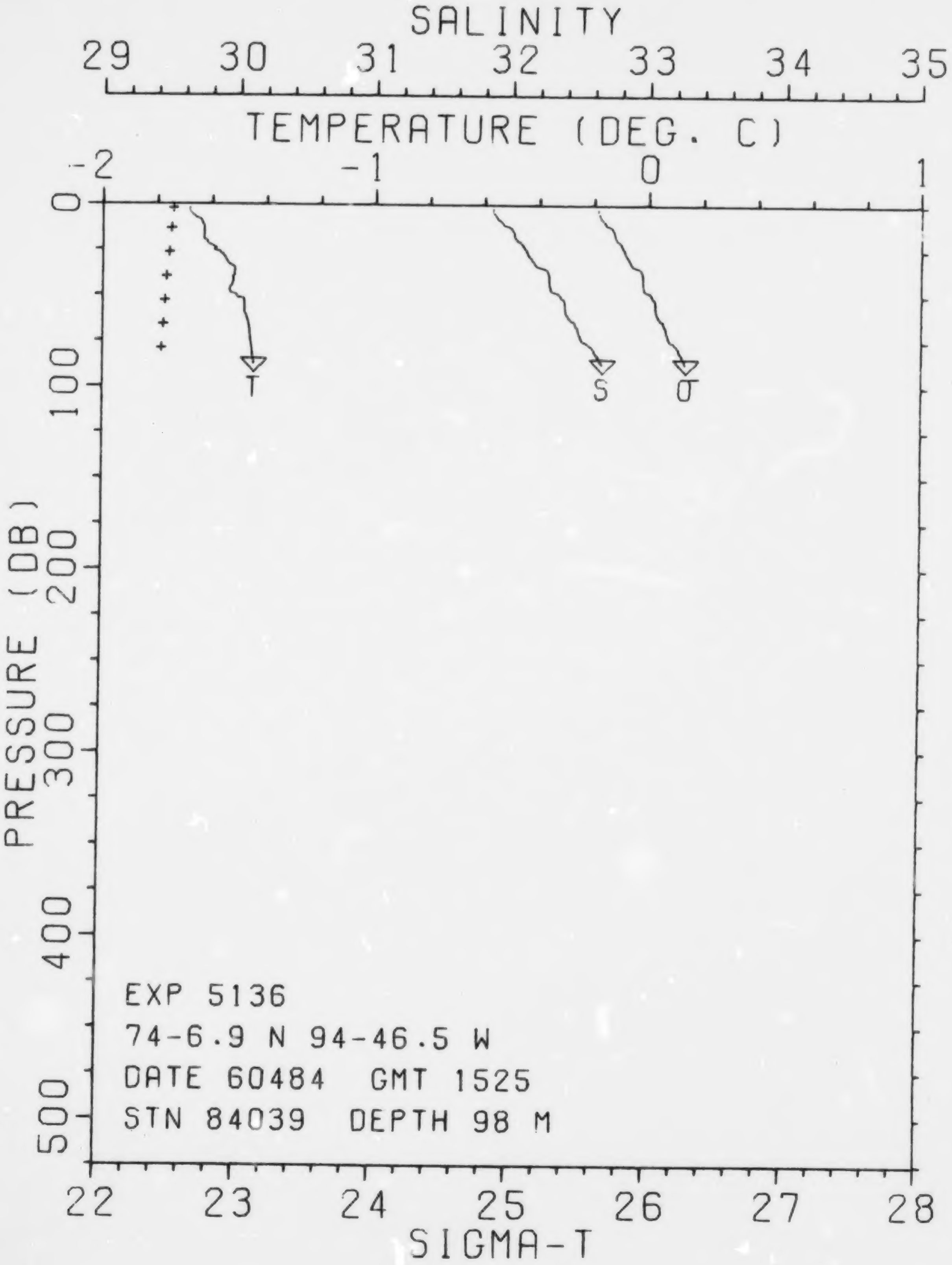
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PRESSURE (DB)
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EXP 5136
74-6.9 N 94-46.5 W
DATE 60484 GMT 1525
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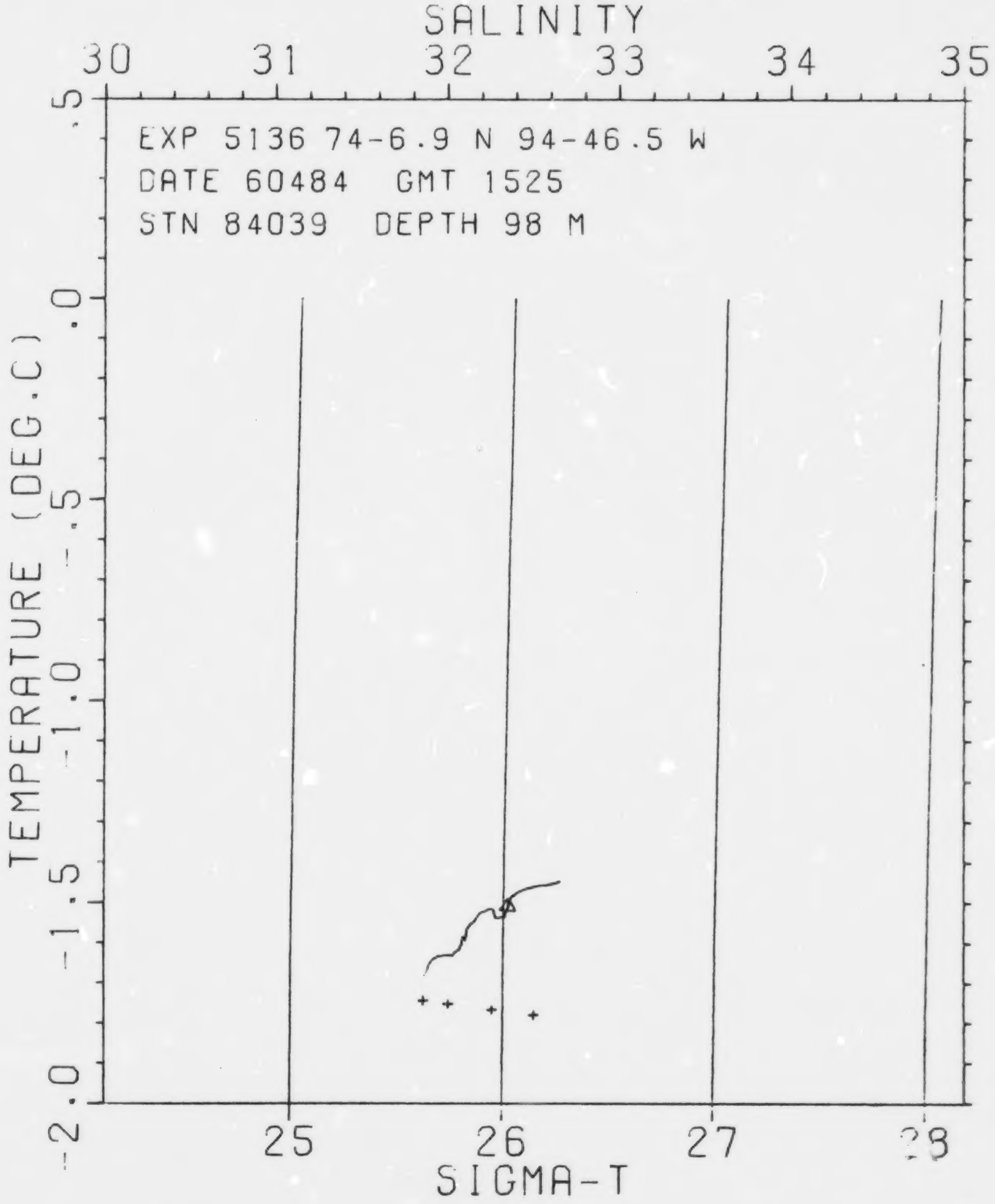
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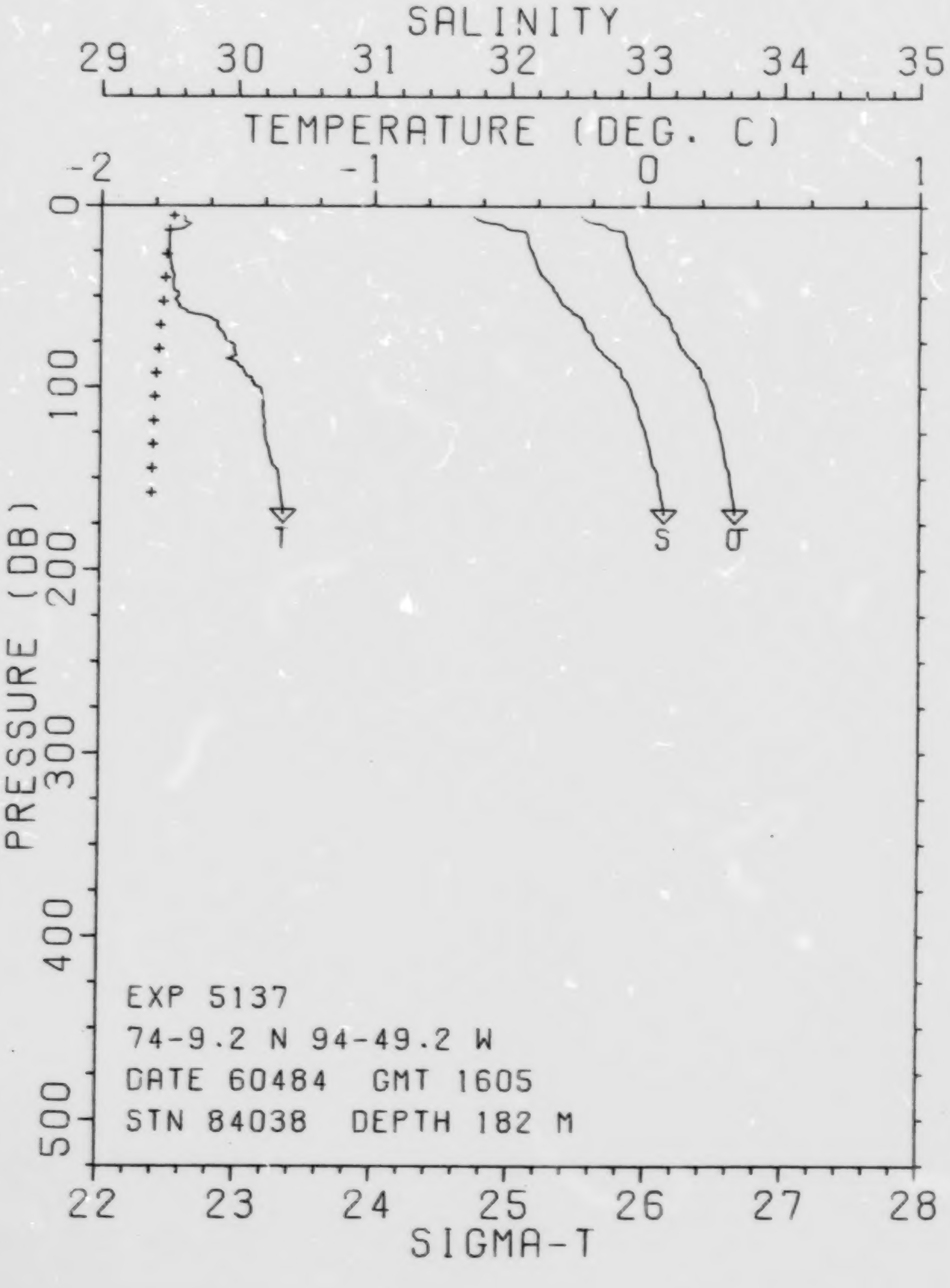
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EXP 5137
74-9.2 N 94-49.2 W
DATE 60484 GMT 1605
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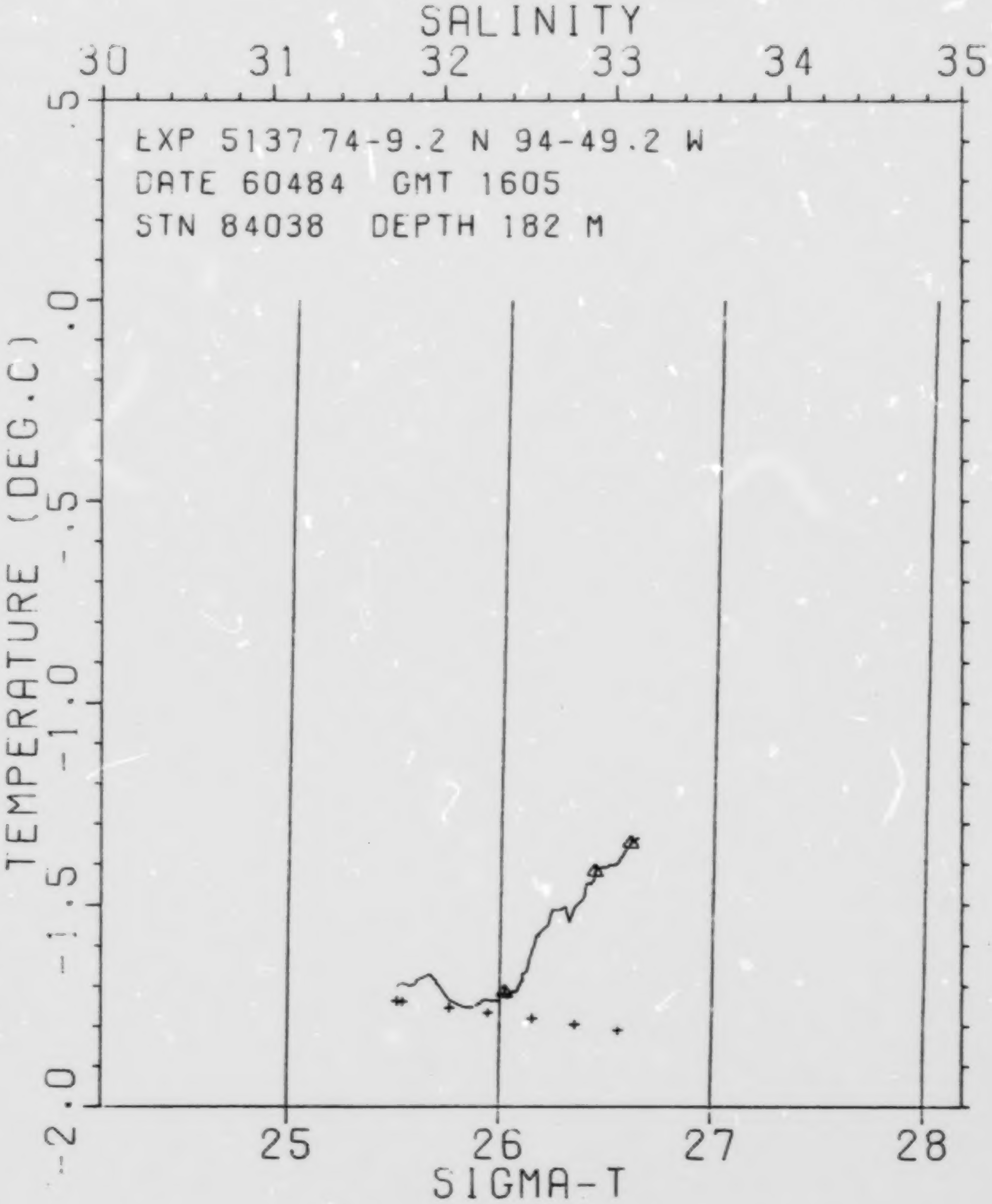
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DATE 60484 GMT 1605
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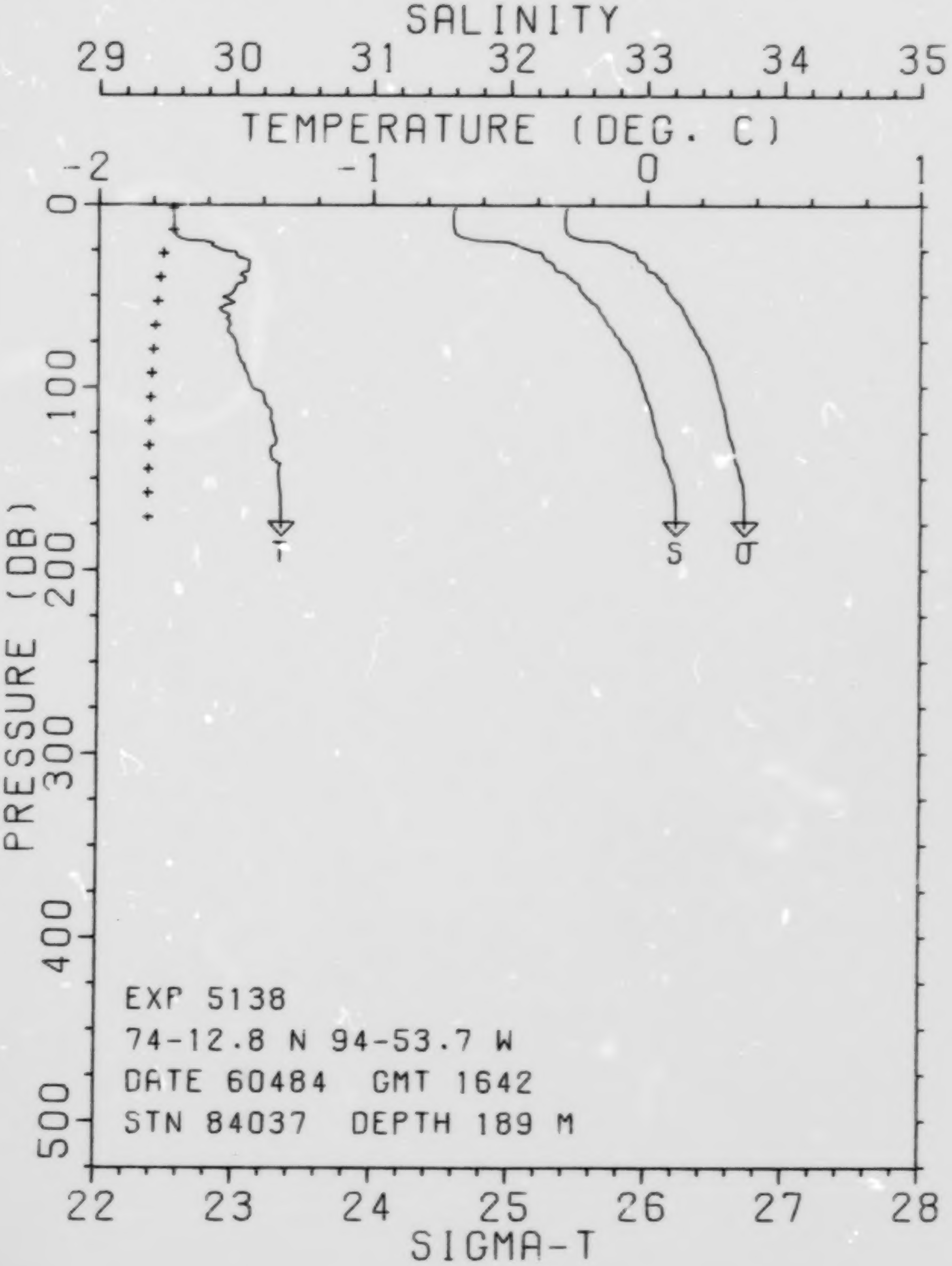
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PRESSURE (DB)
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EXP 5138
74-12.8 N 94-53.7 W
DATE 60484 GMT 1642
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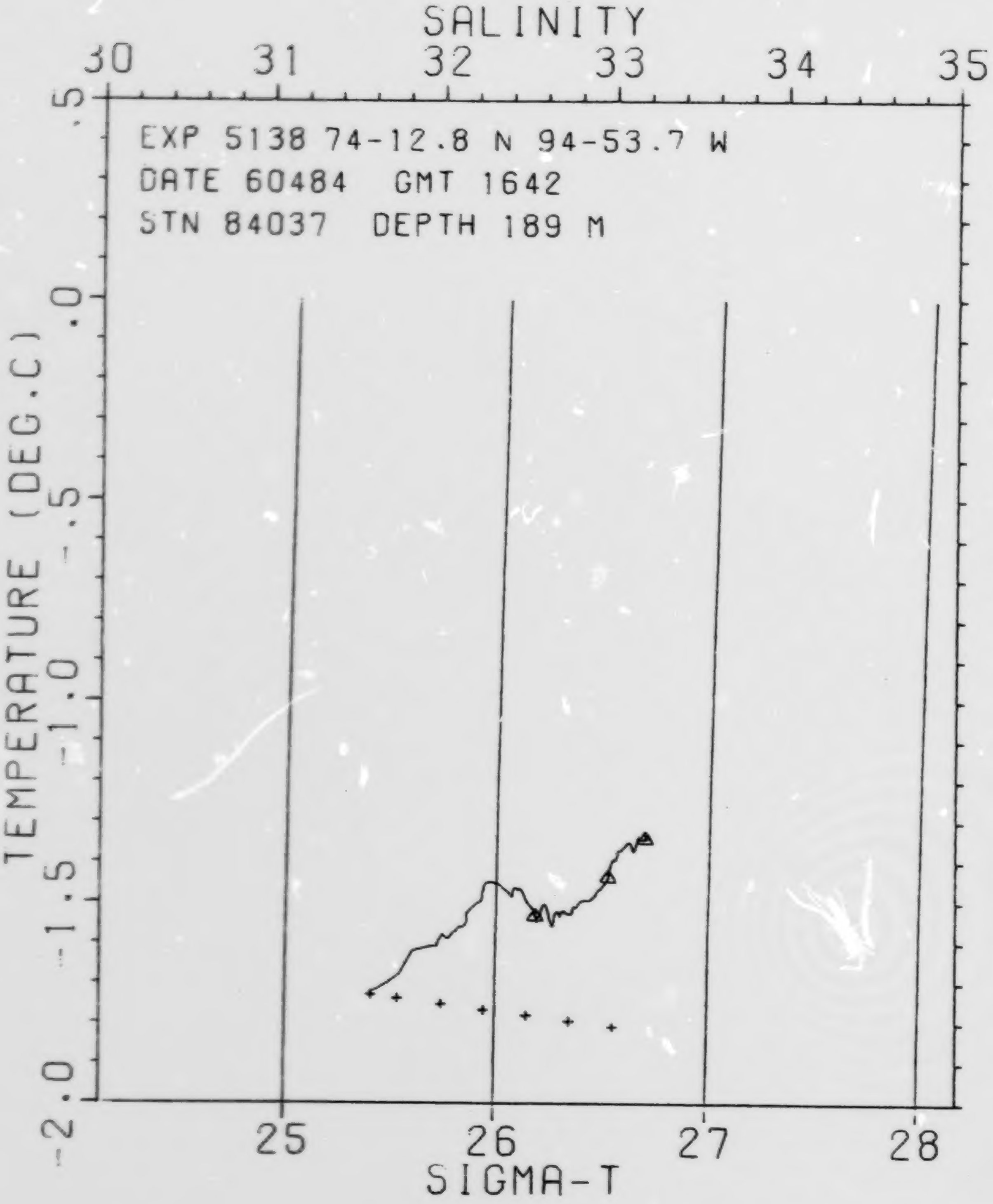
SIGMA-T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DATE 60484 GMT 1642
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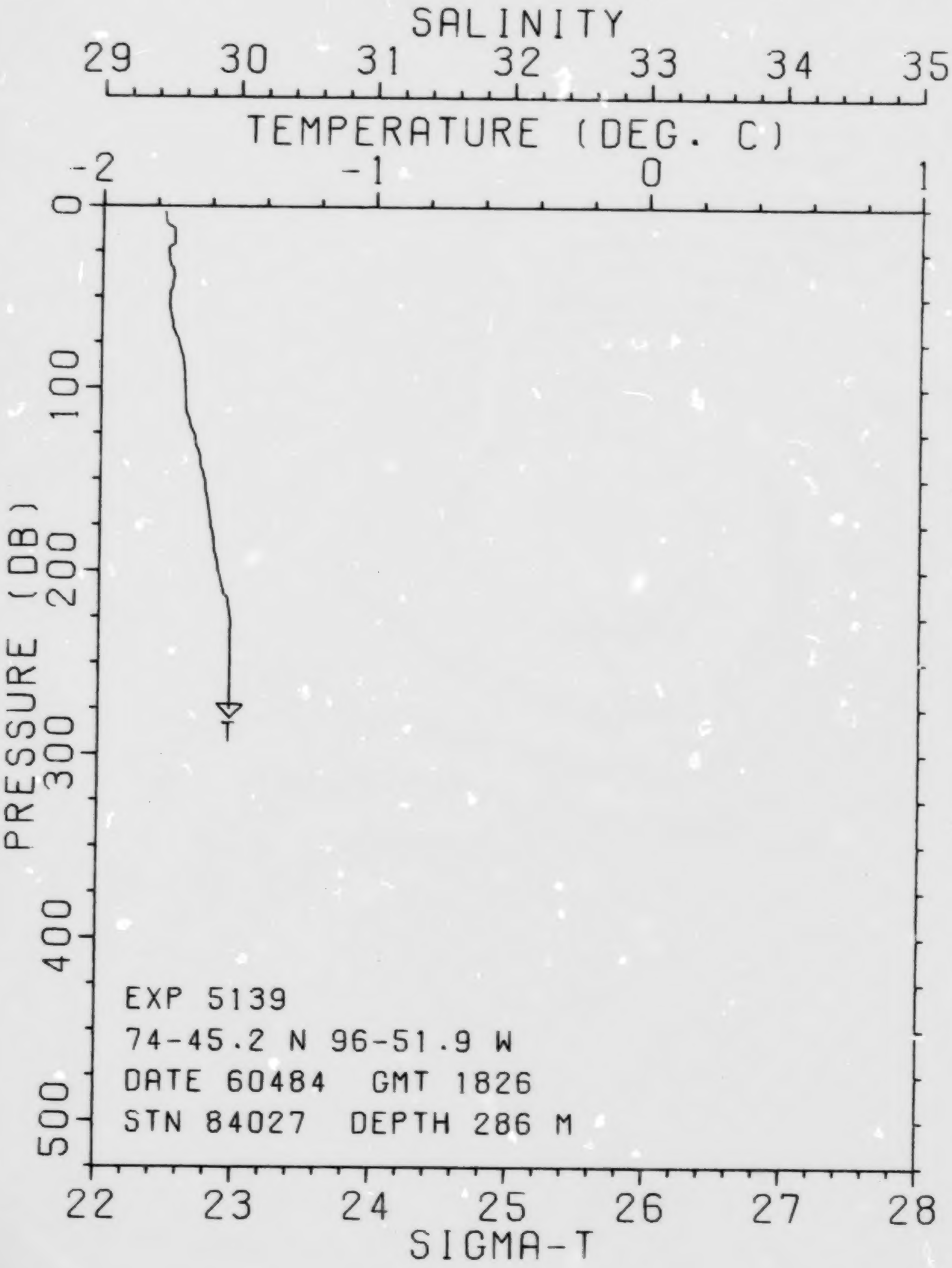
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EXP 5139
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DATE 60484 GMT 1826
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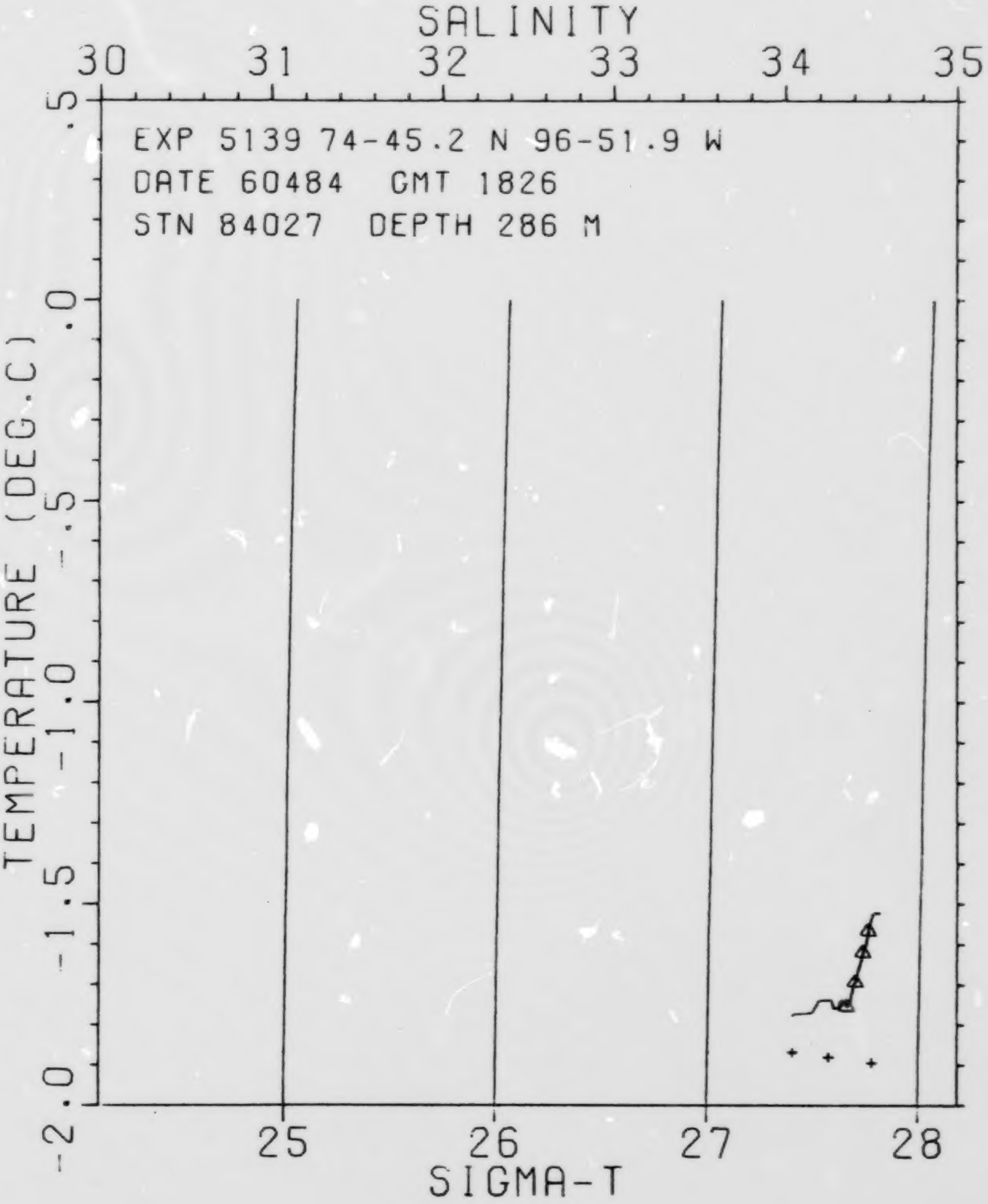
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DATE 60484 GMT 1826
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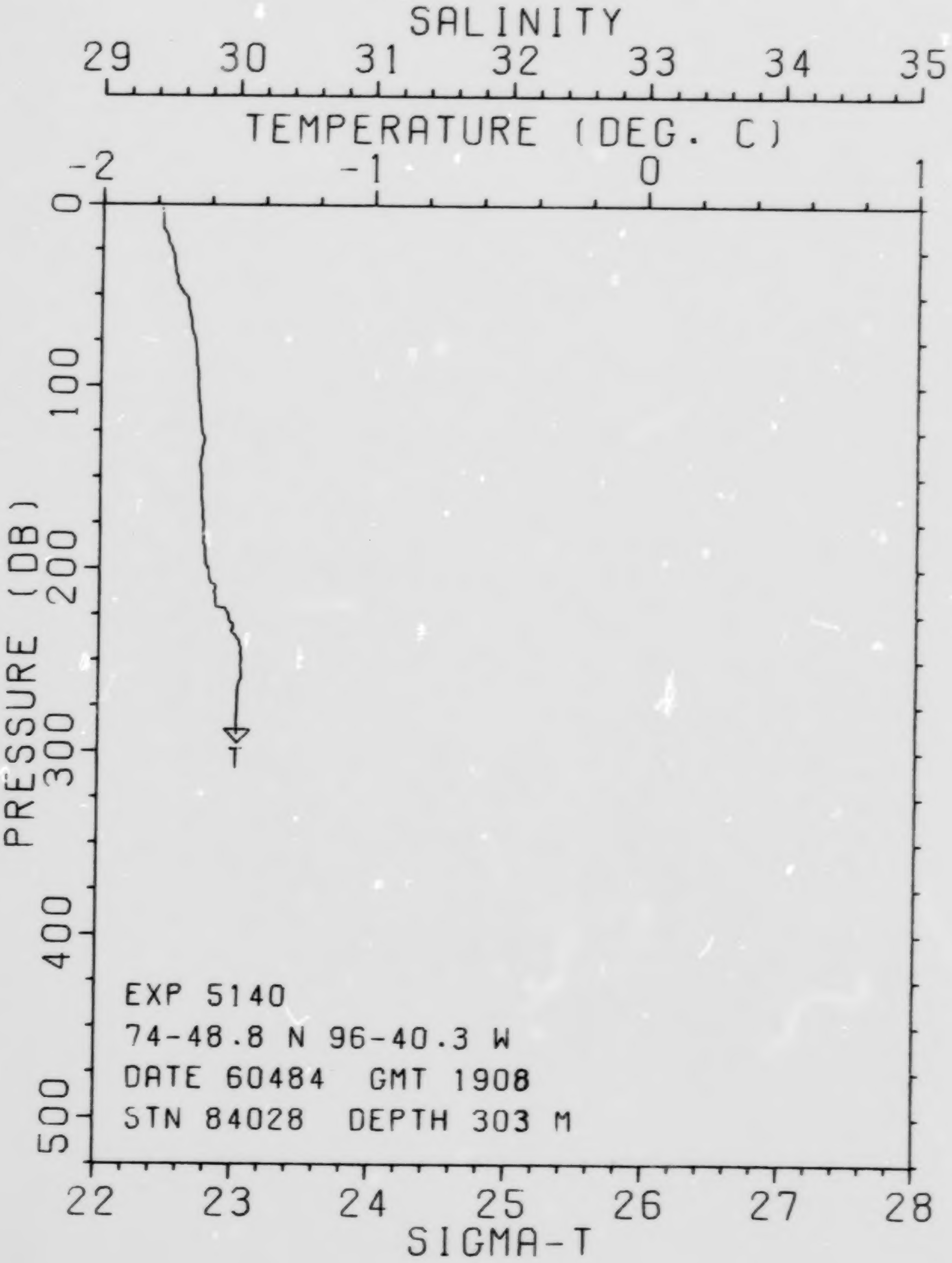
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PRESSURE (DB)
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EXP 5140
74-48.8 N 96-40.3 W
DATE 60484 GMT 1908
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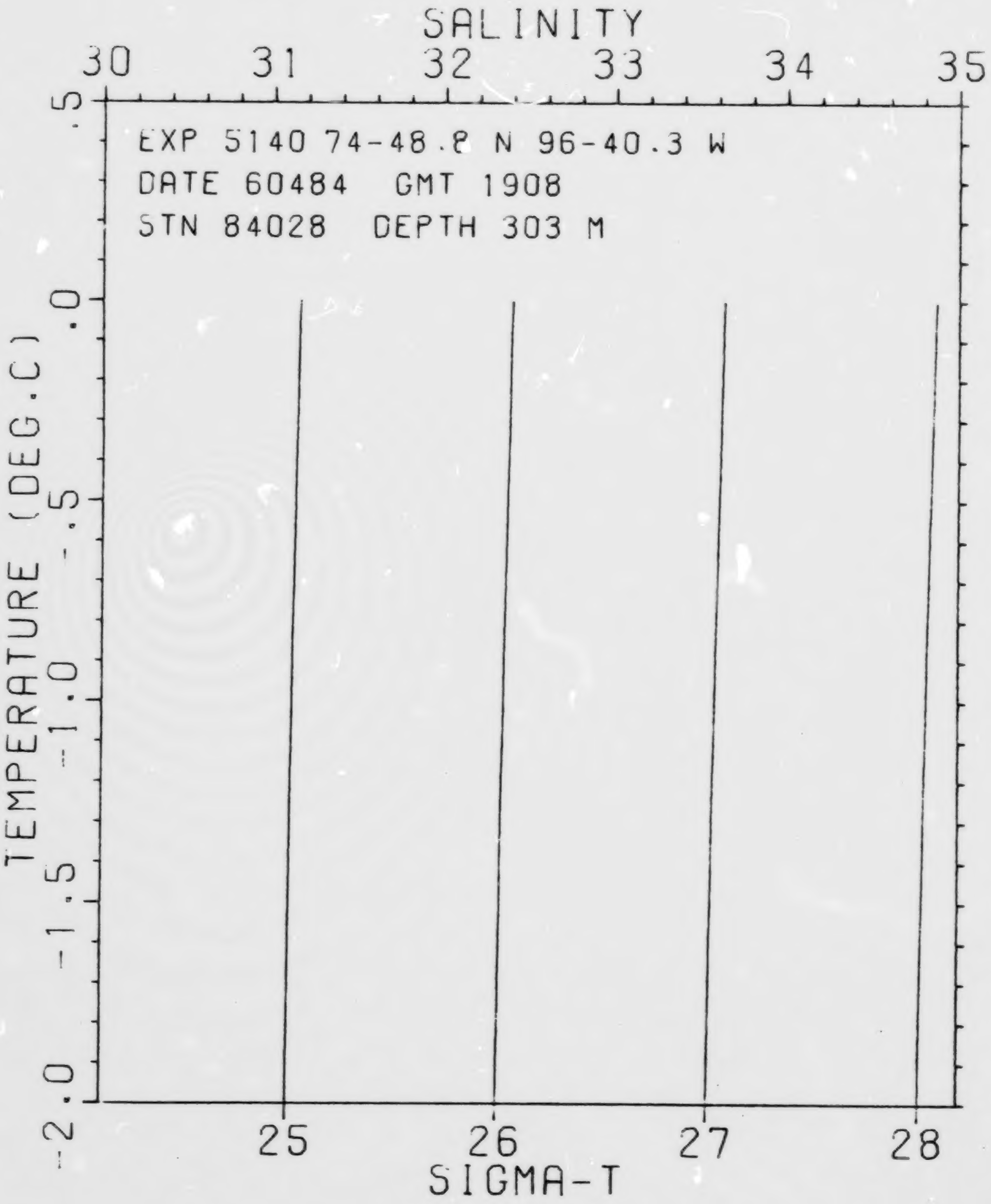
SIGMA-T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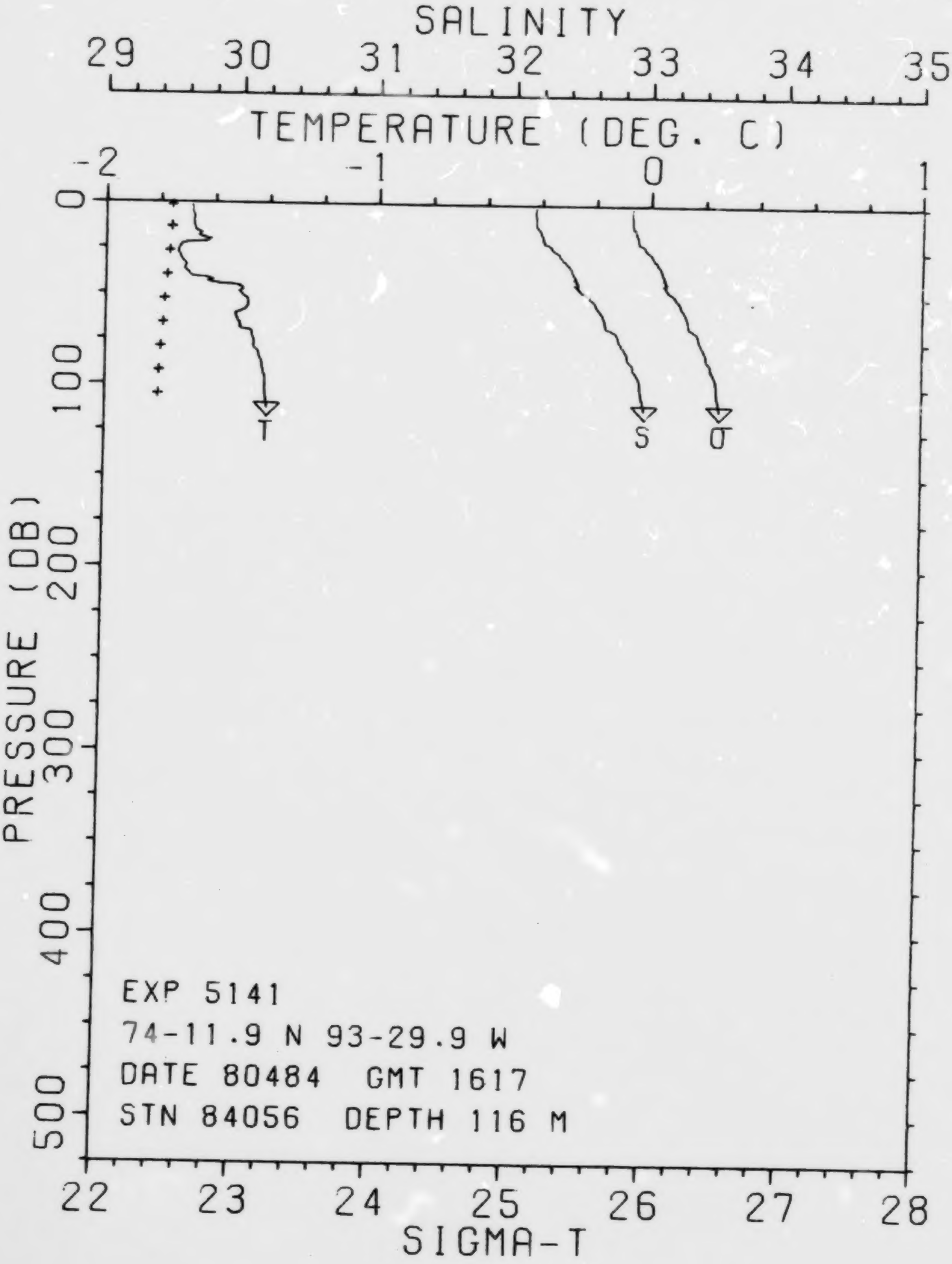
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PRESSURE (DB)
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EXP 5141
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DATE 80484 GMT 1617
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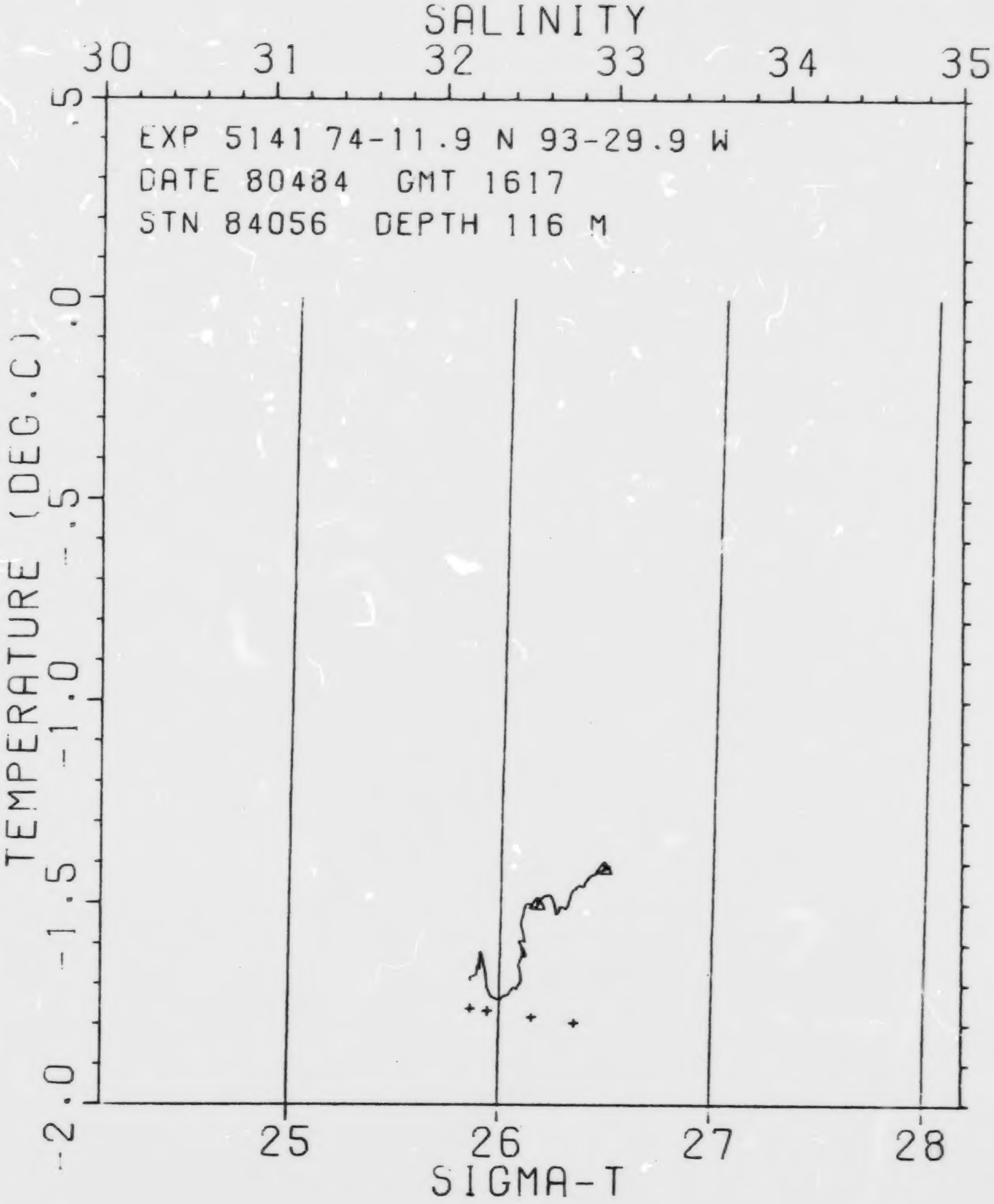
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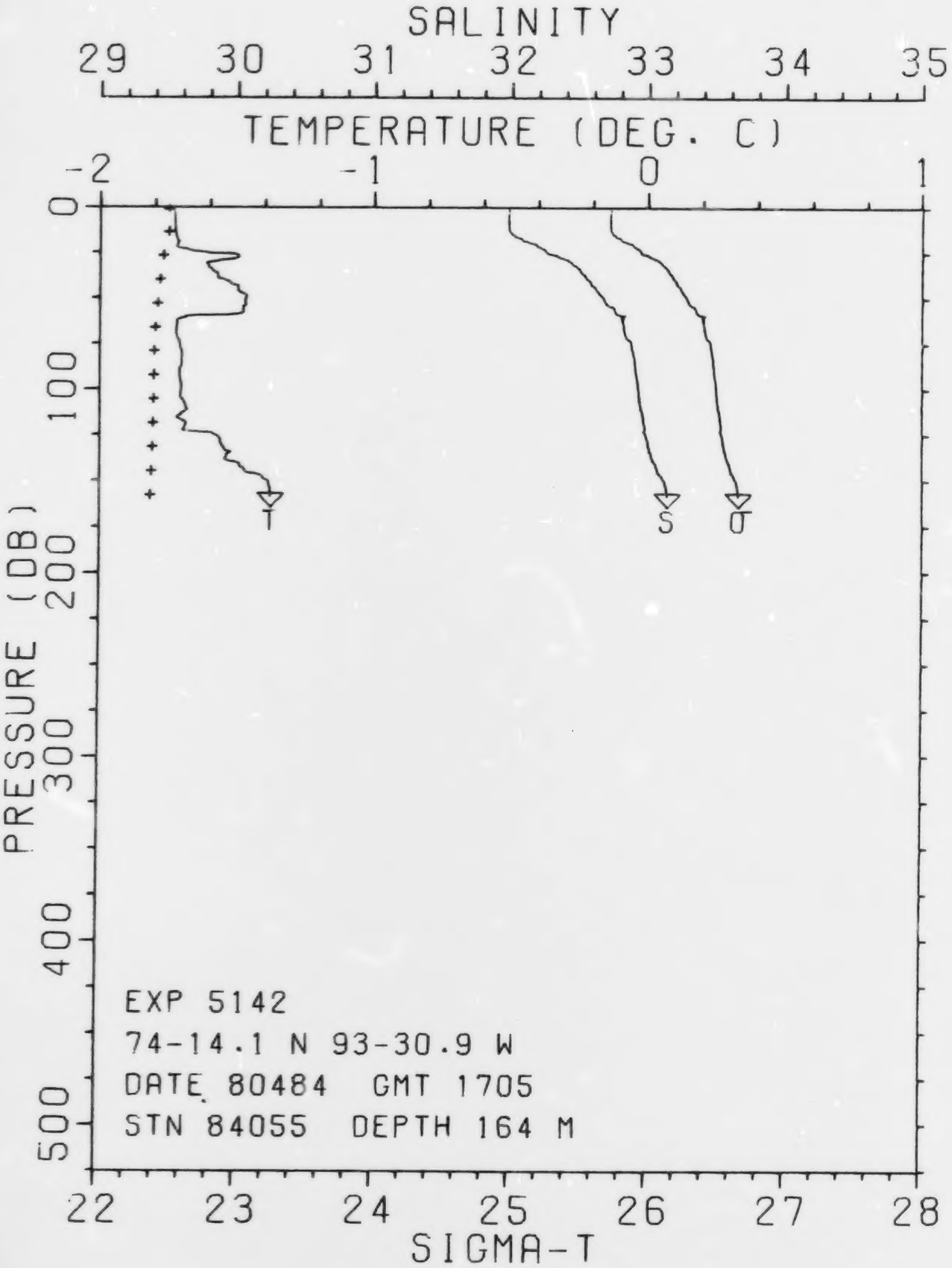
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EXP 5142
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DATE 80484 GMT 1705
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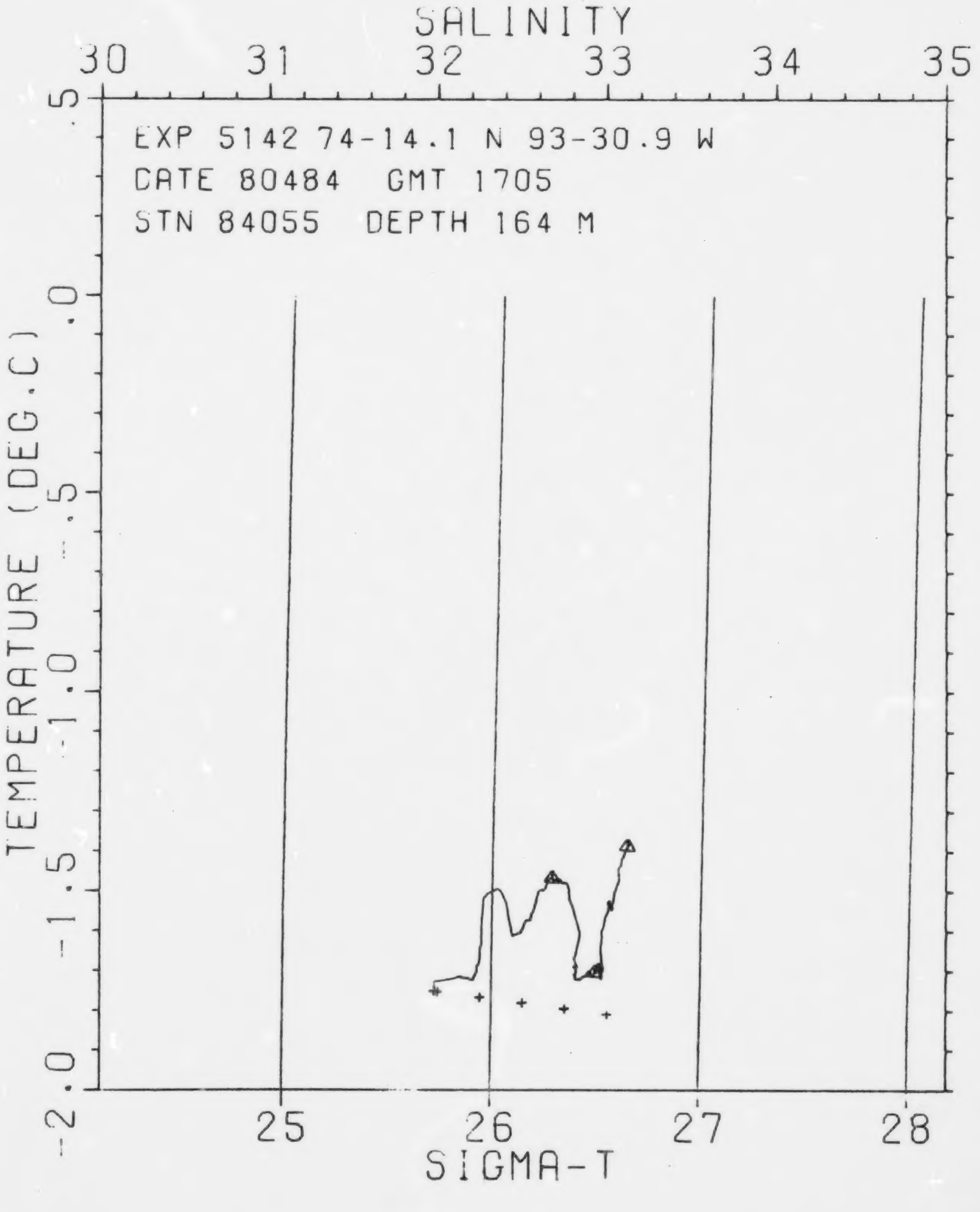
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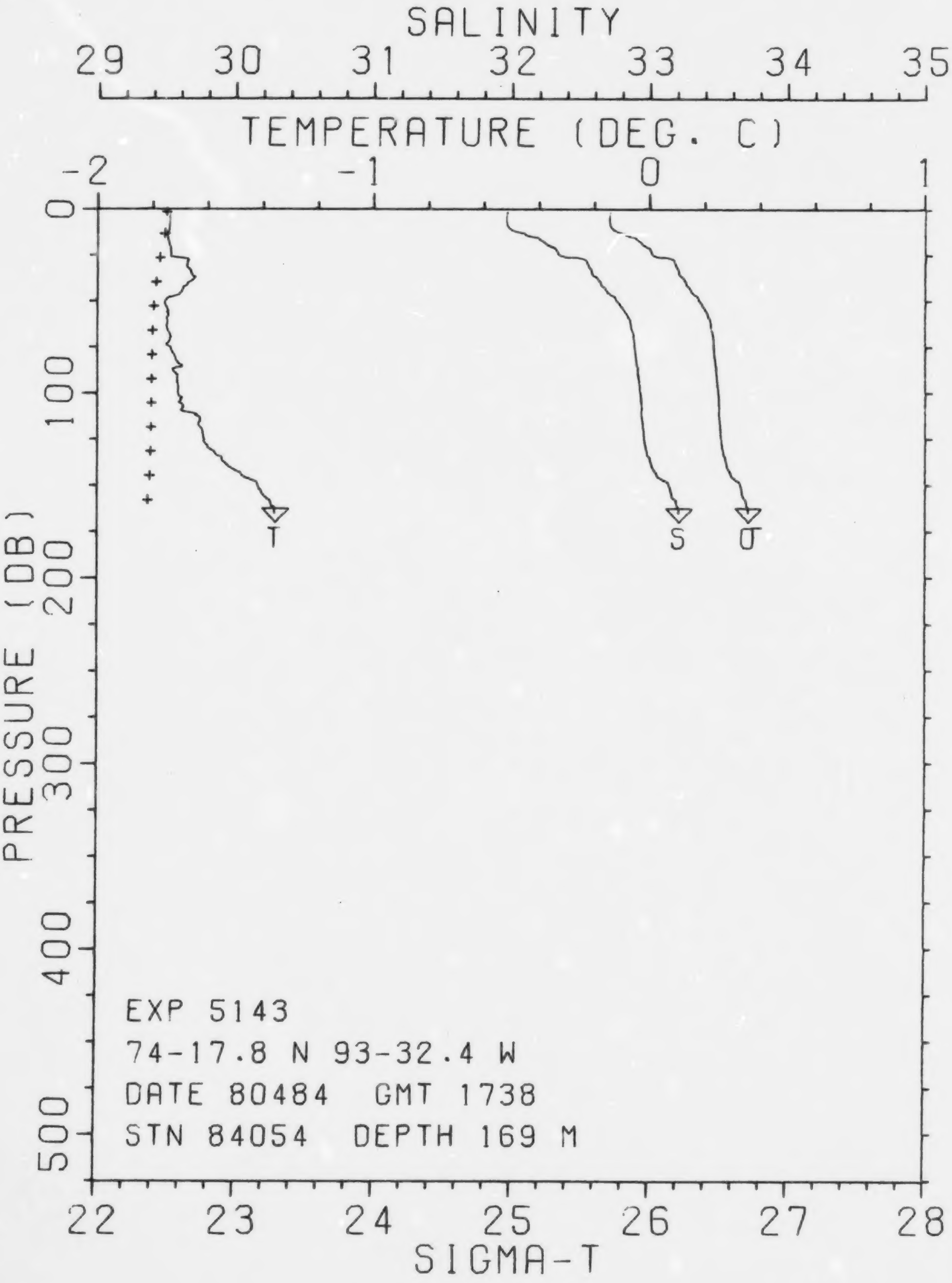
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PRESSURE (DB)
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EXP 5143
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DATE 80484 GMT 1738
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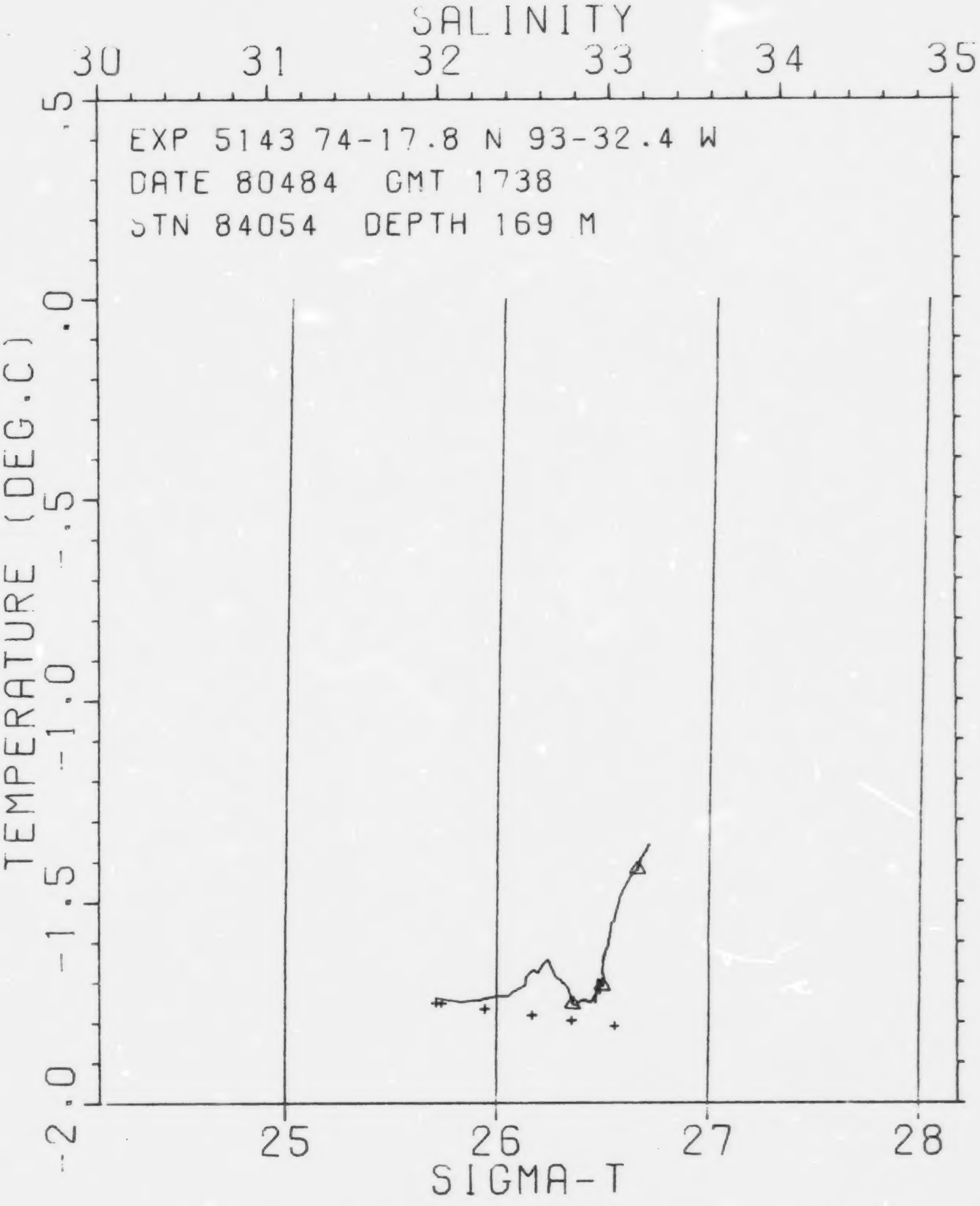
SIGMA-T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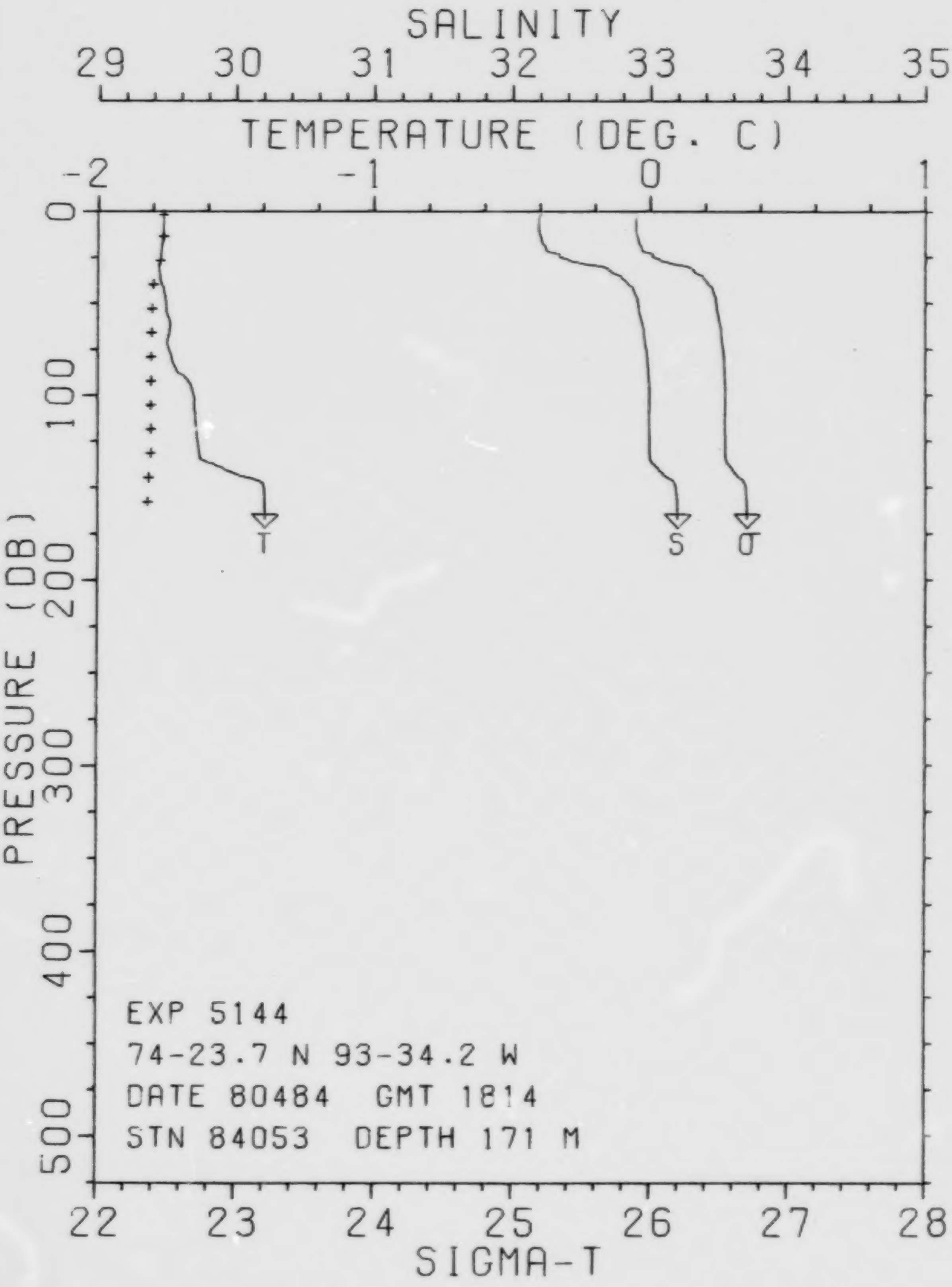
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PRESSURE (DB)
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EXP 5144
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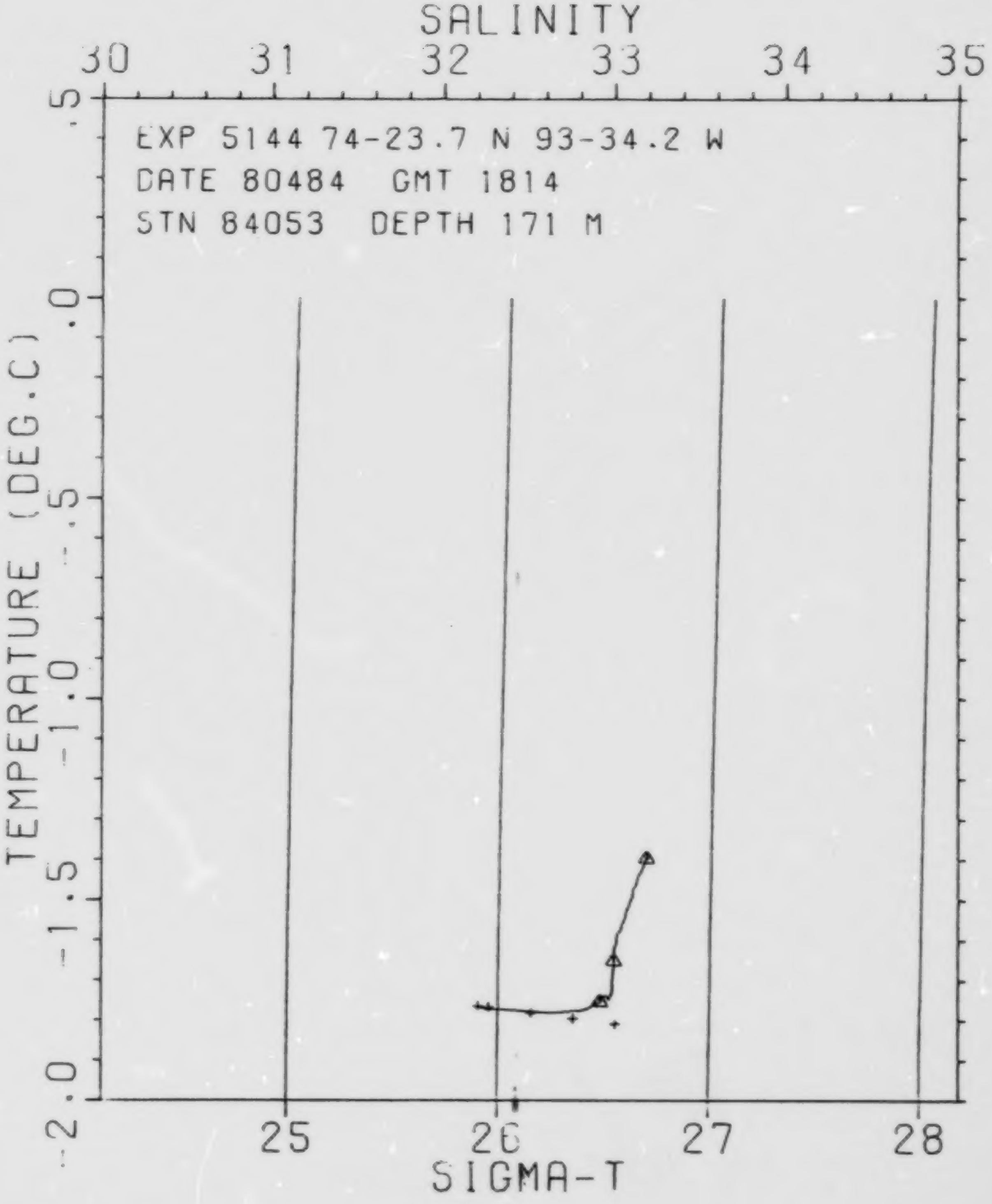
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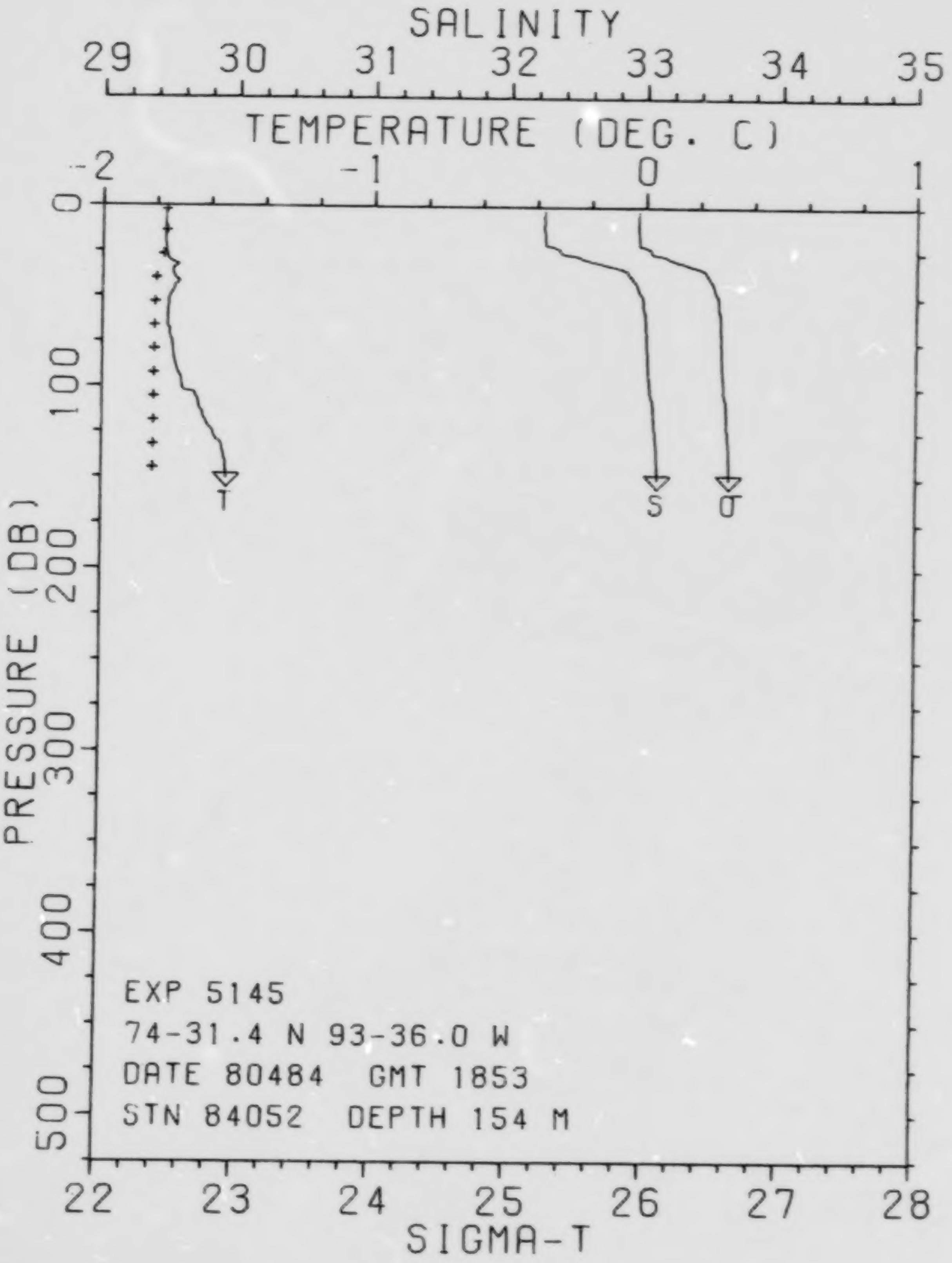
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PRESSURE (DB)
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EXP 5145
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DATE 80484 GMT 1853
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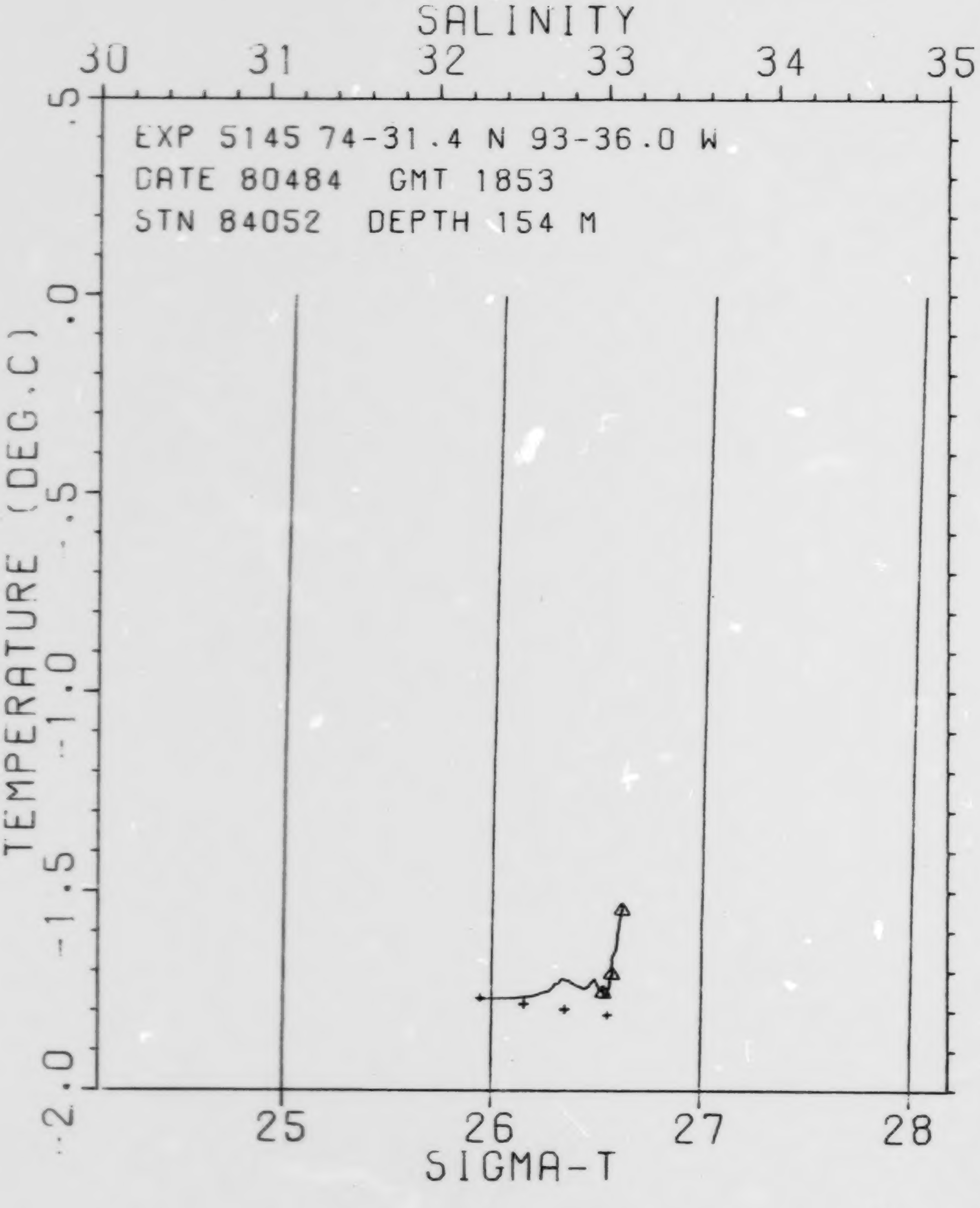
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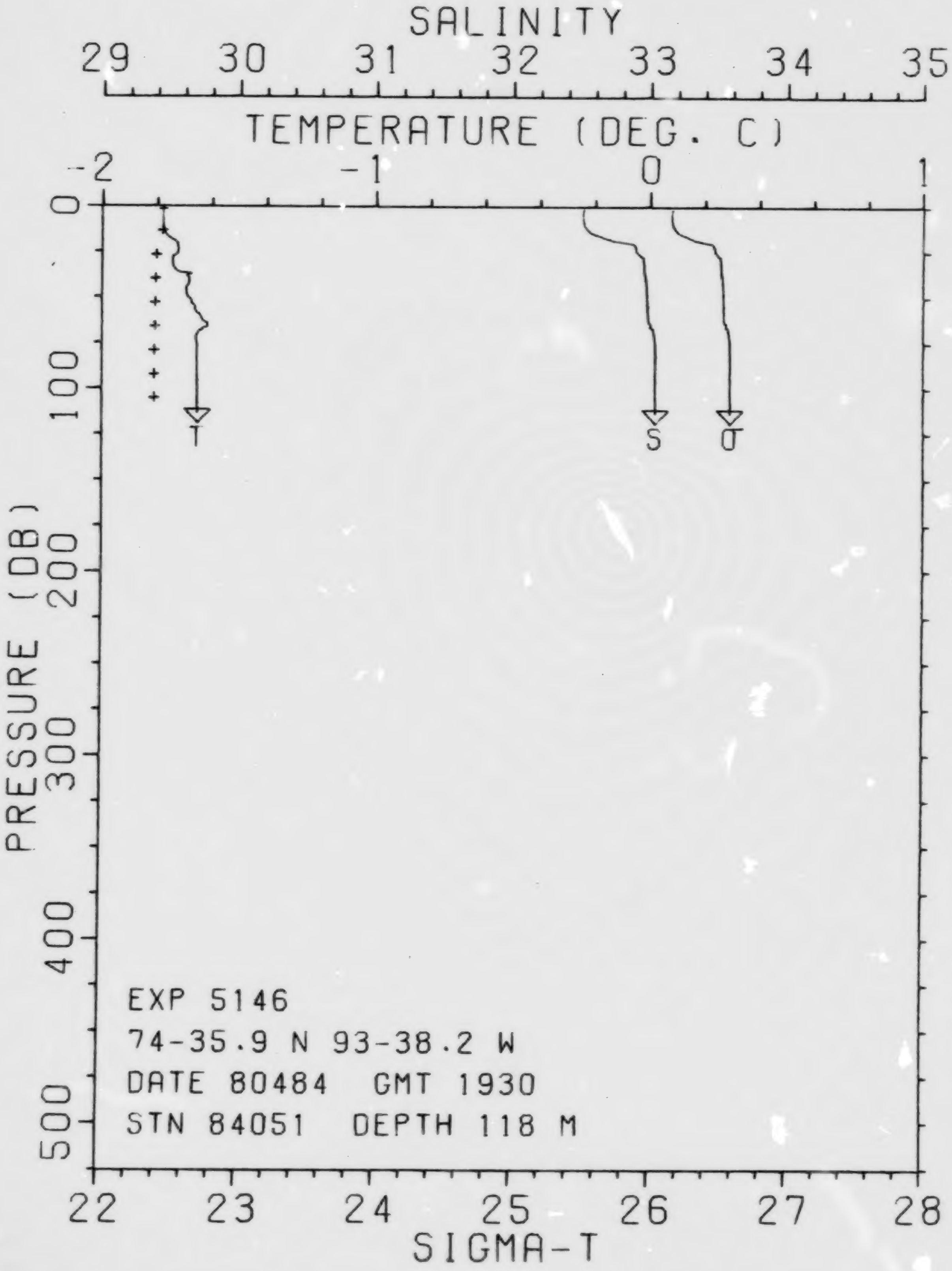
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PRESSURE (DB)
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EXP 5146
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DATE 80484 GMT 1930
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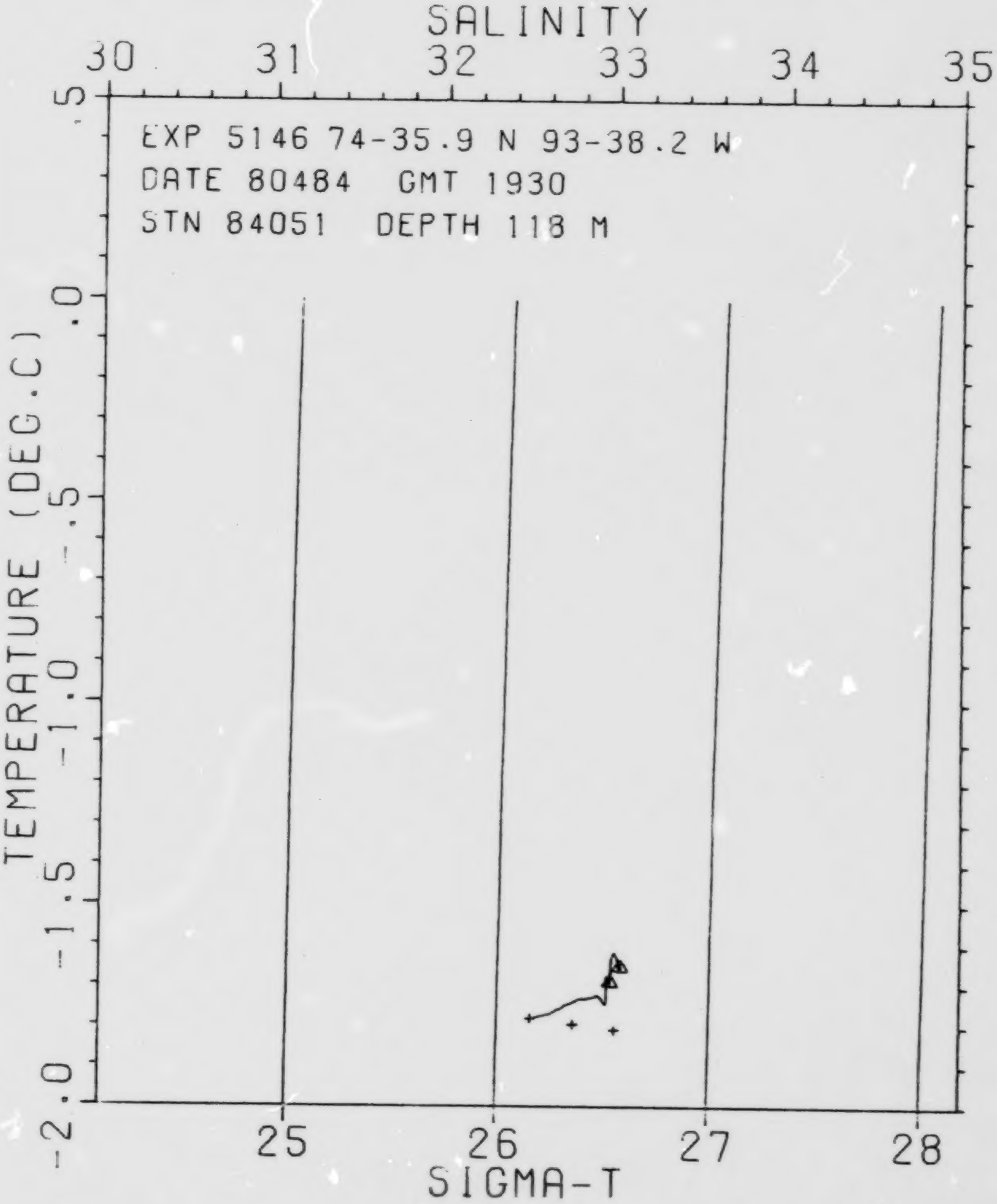
SIGMA-T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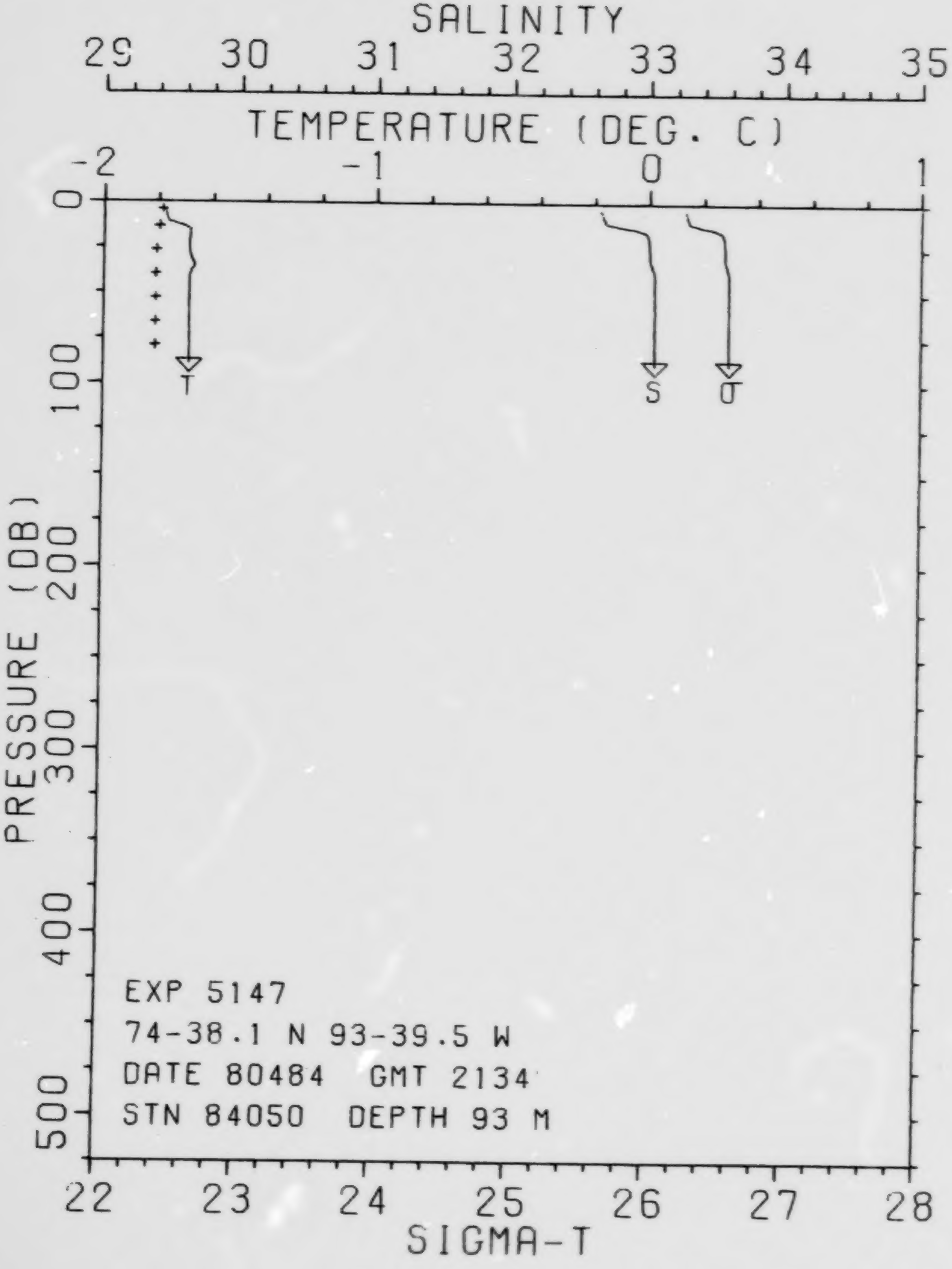
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PRESSURE (DB)
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EXP 5147
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DATE 80484 GMT 2134
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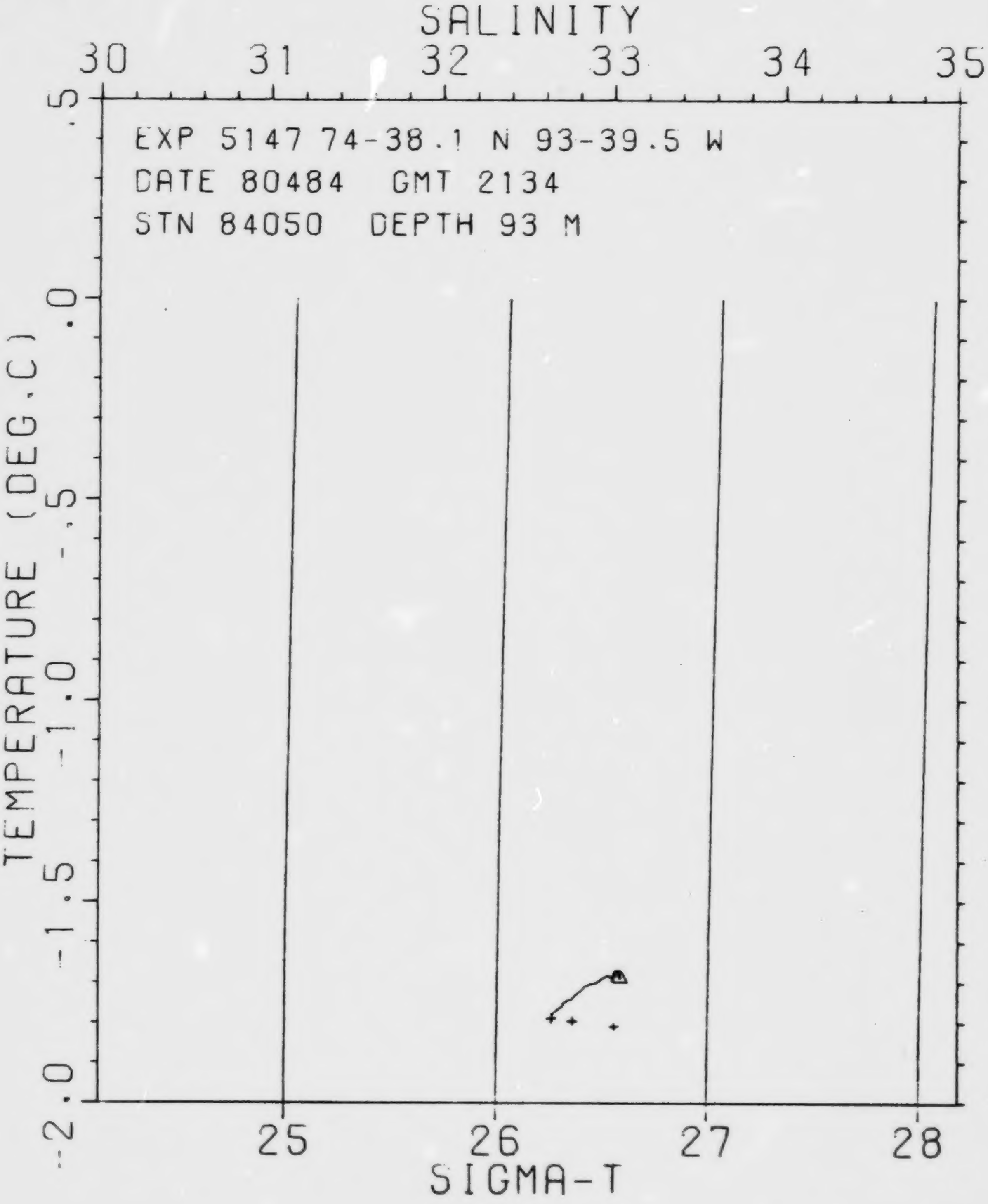
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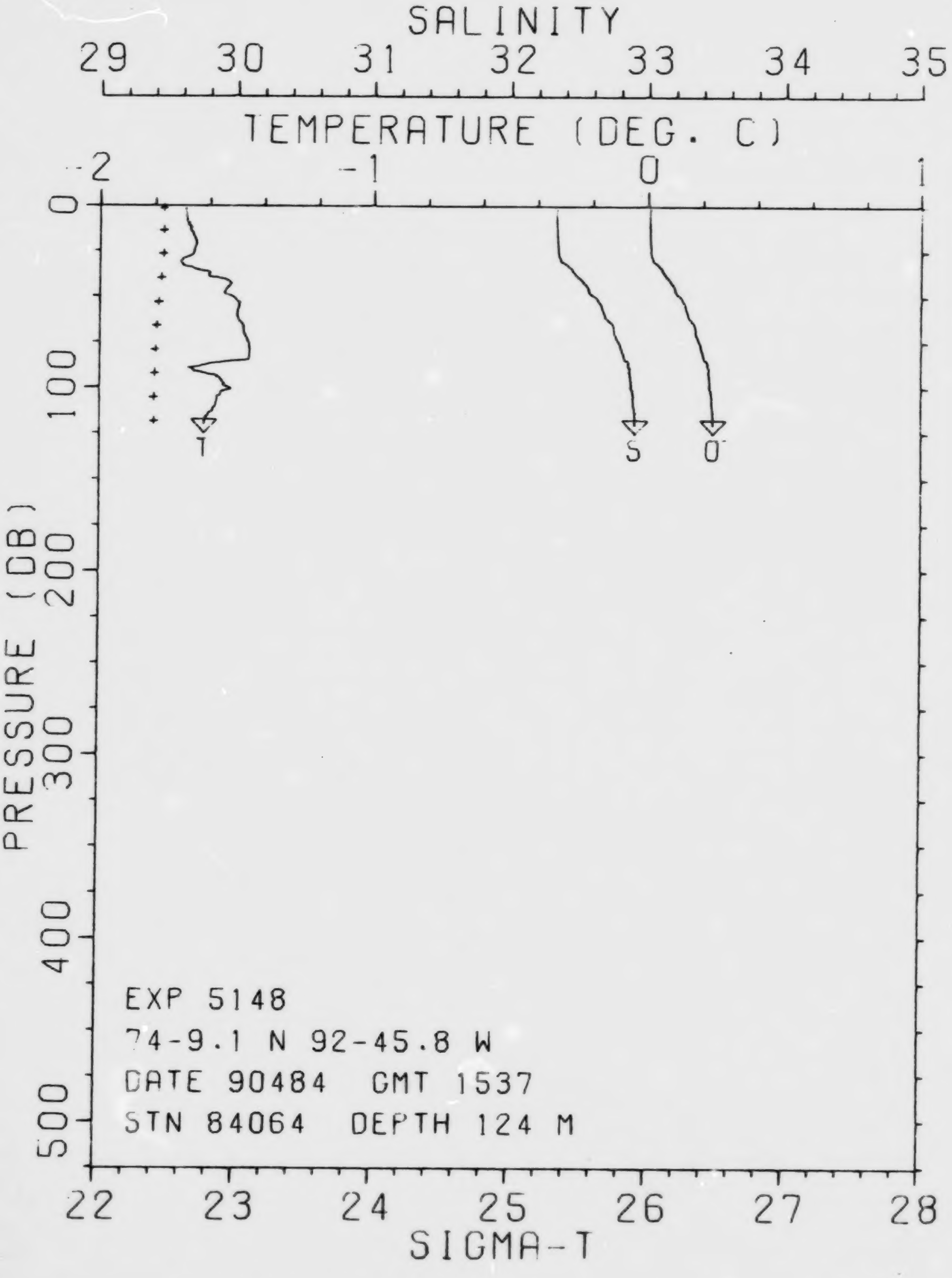
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PRESSURE (DB)
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EXP 5148
74-9.1 N 92-45.8 W
DATE 90484 GMT 1537
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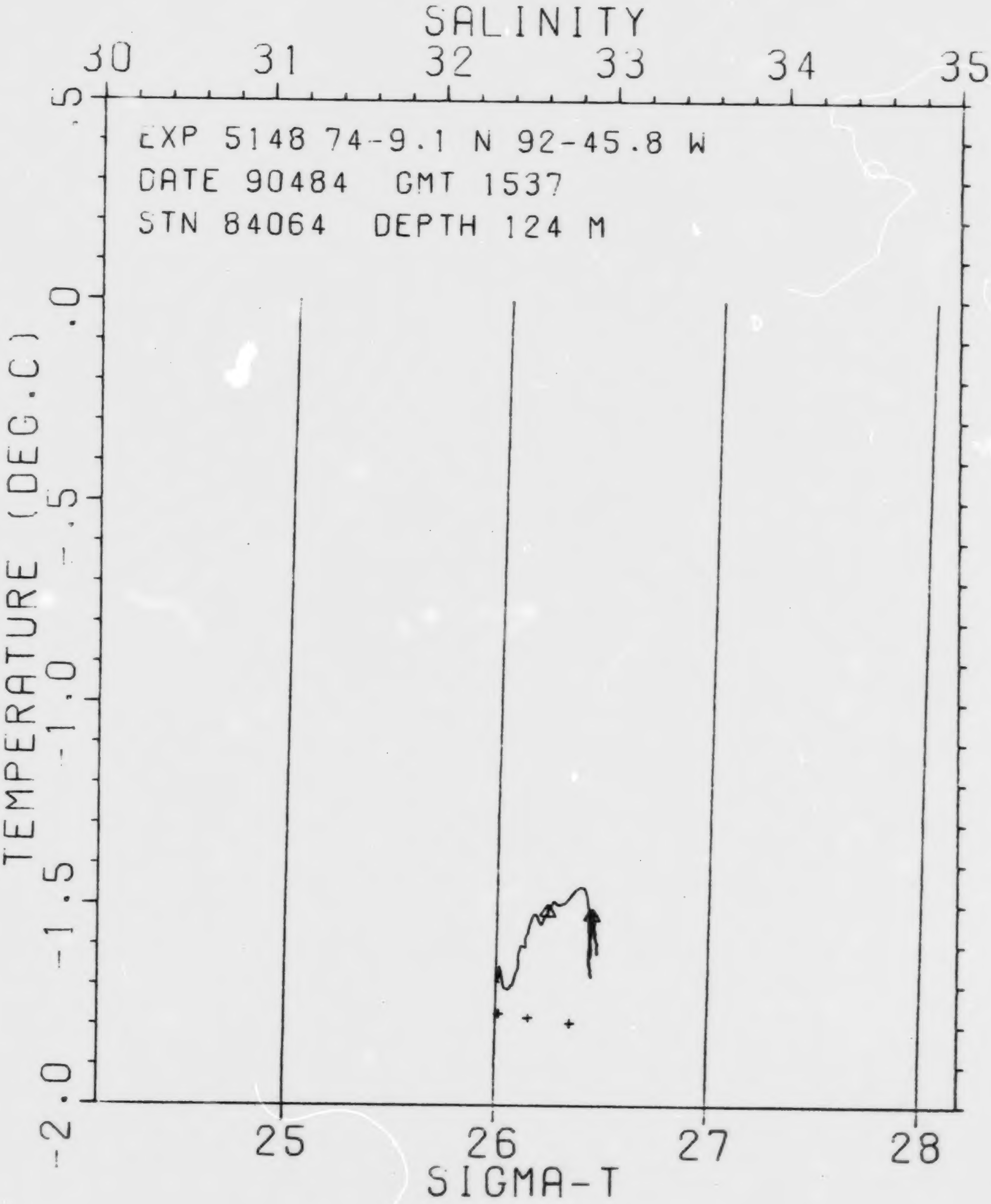
SIGMA-T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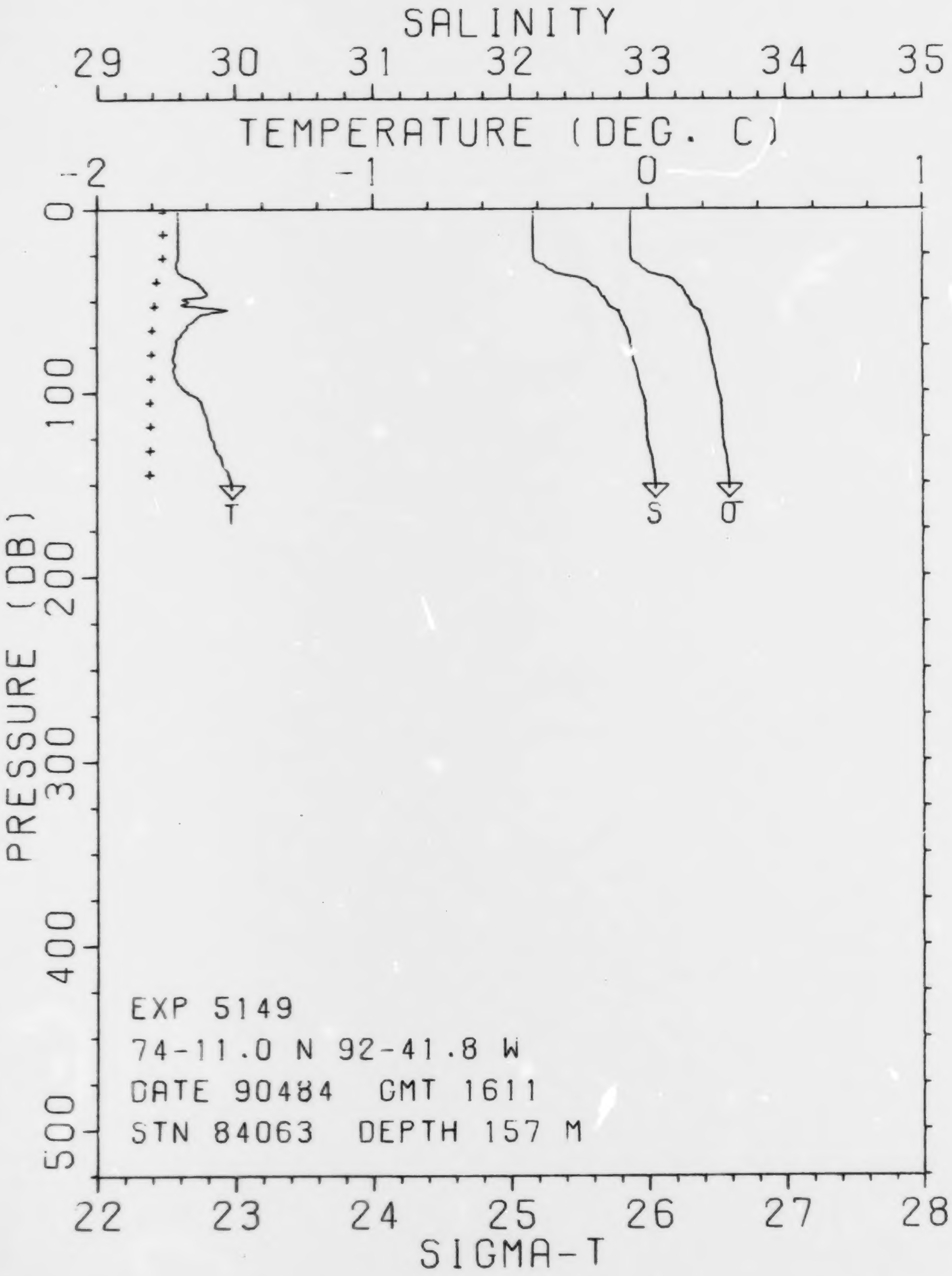
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PRESSURE (DB)
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EXP 5149
74-11.0 N 92-41.8 W
DATE 90484 GMT 1611
STN 84063 DEPTH 157 M
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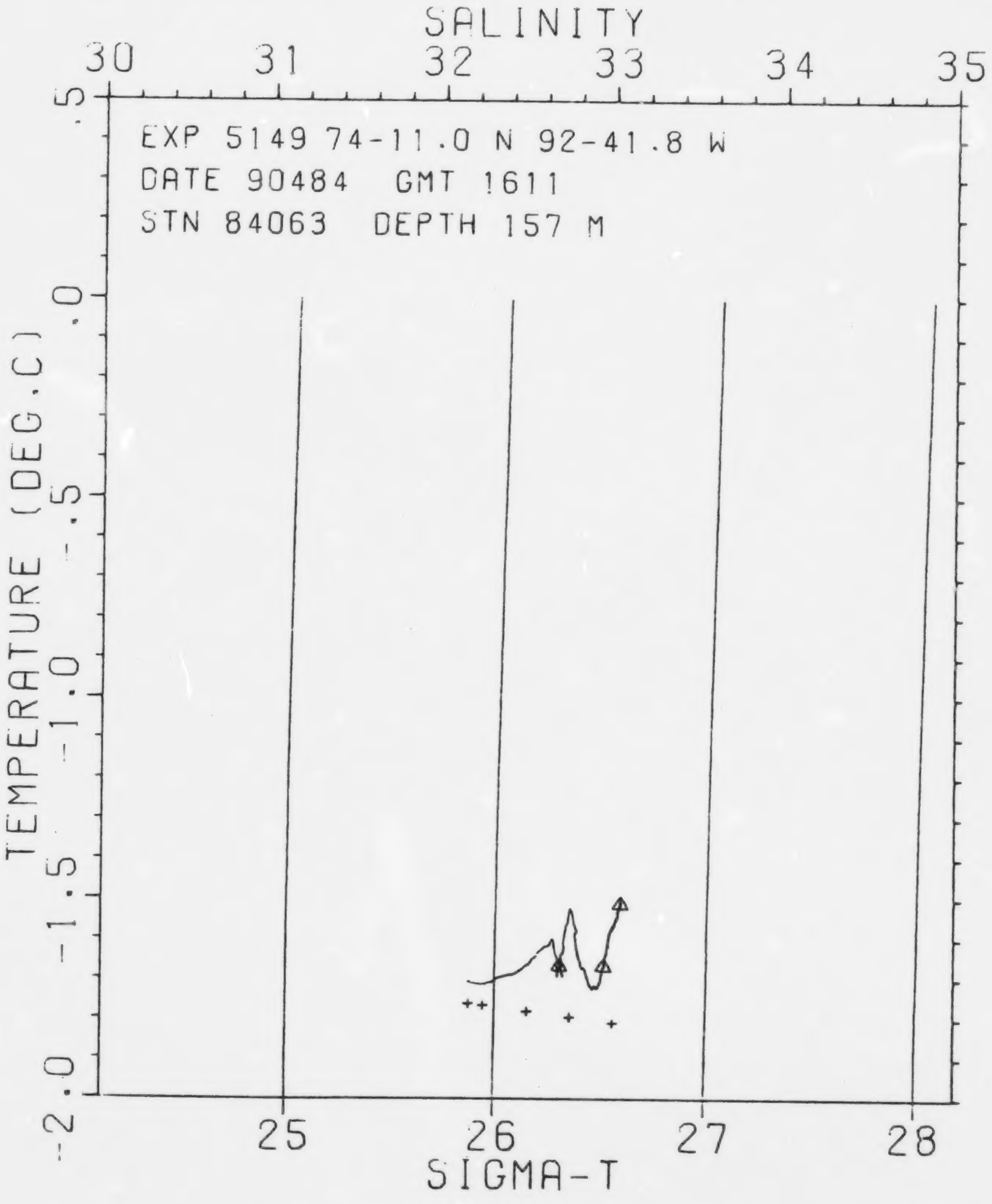
SIGMA-T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EXP 5149 74-11.0 N 92-41.8 W
DATE 90484 GMT 1611
STN 84063 DEPTH 157 M
TEMPERATURE (DEG.C)
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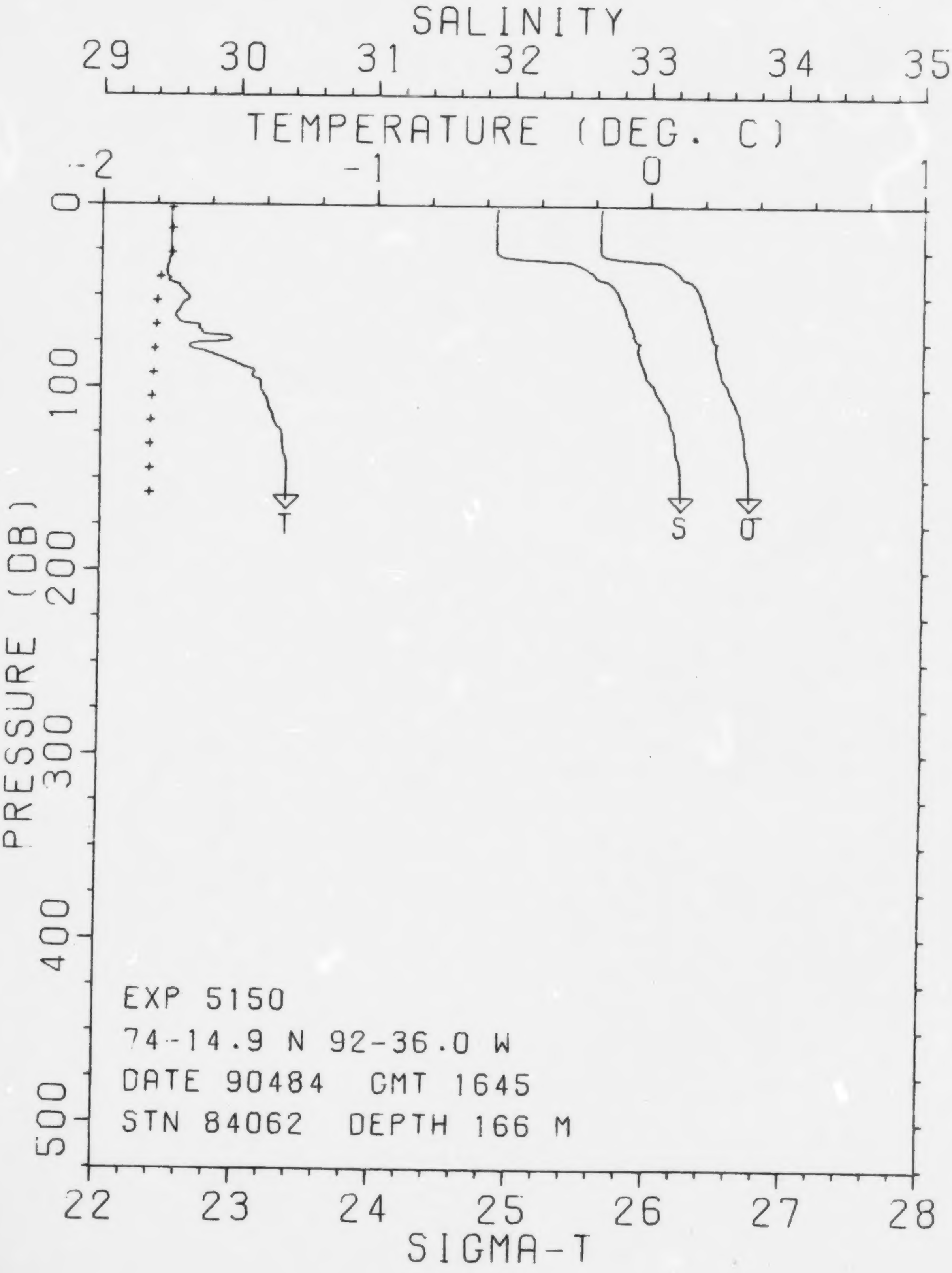
SIGMA-T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TEMPERATURE (DEG. C)
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0
100
200
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400
500
PRESSURE (DB)
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EXP 5150
74-14.9 N 92-36.0 W
DATE 90484 GMT 1645
STN 84062 DEPTH 166 M
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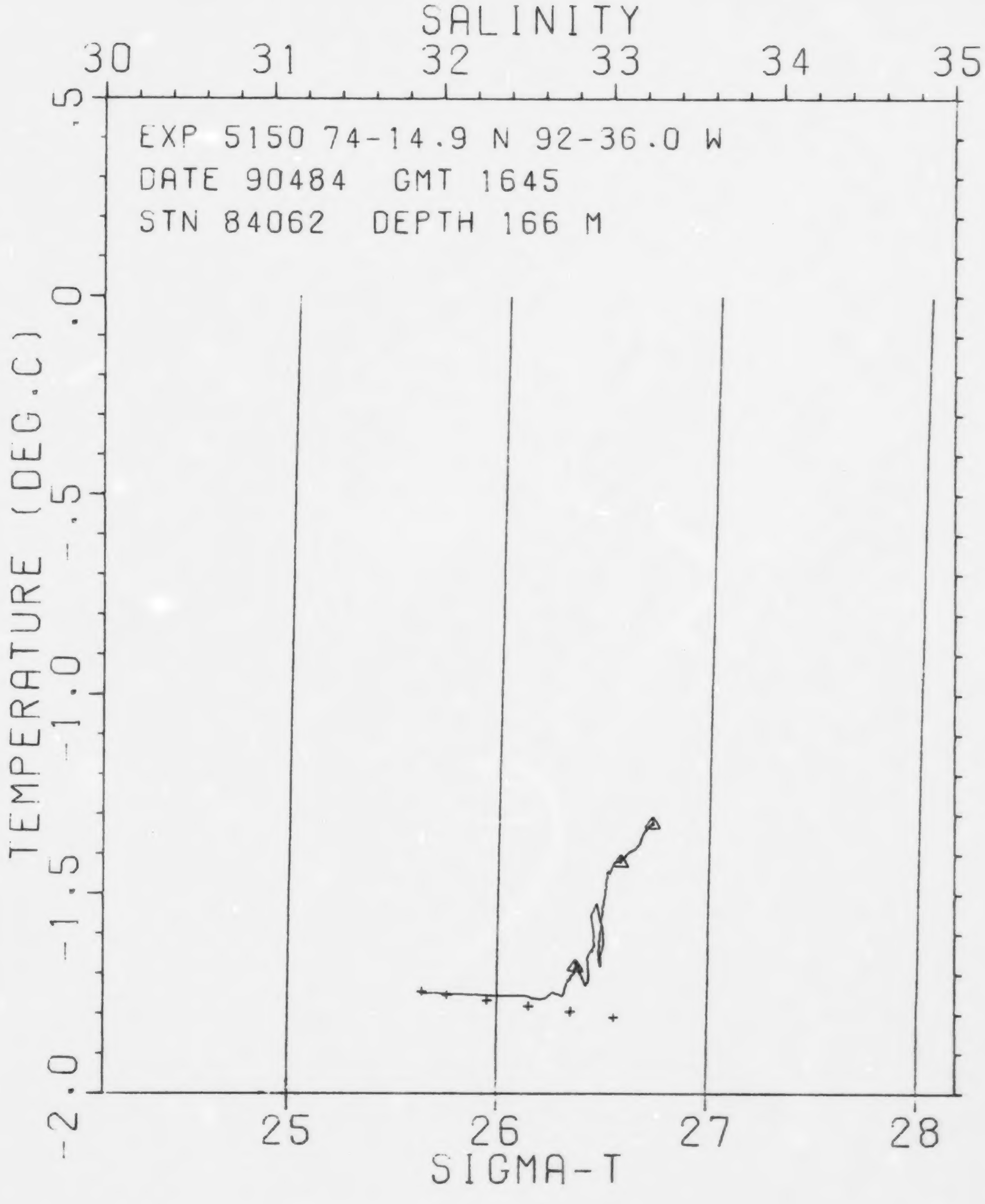
SIGMA-T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DATE 90484 GMT 1645
STN 84062 DEPTH 166 M
TEMPERATURE (DEG.C)
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-2.0
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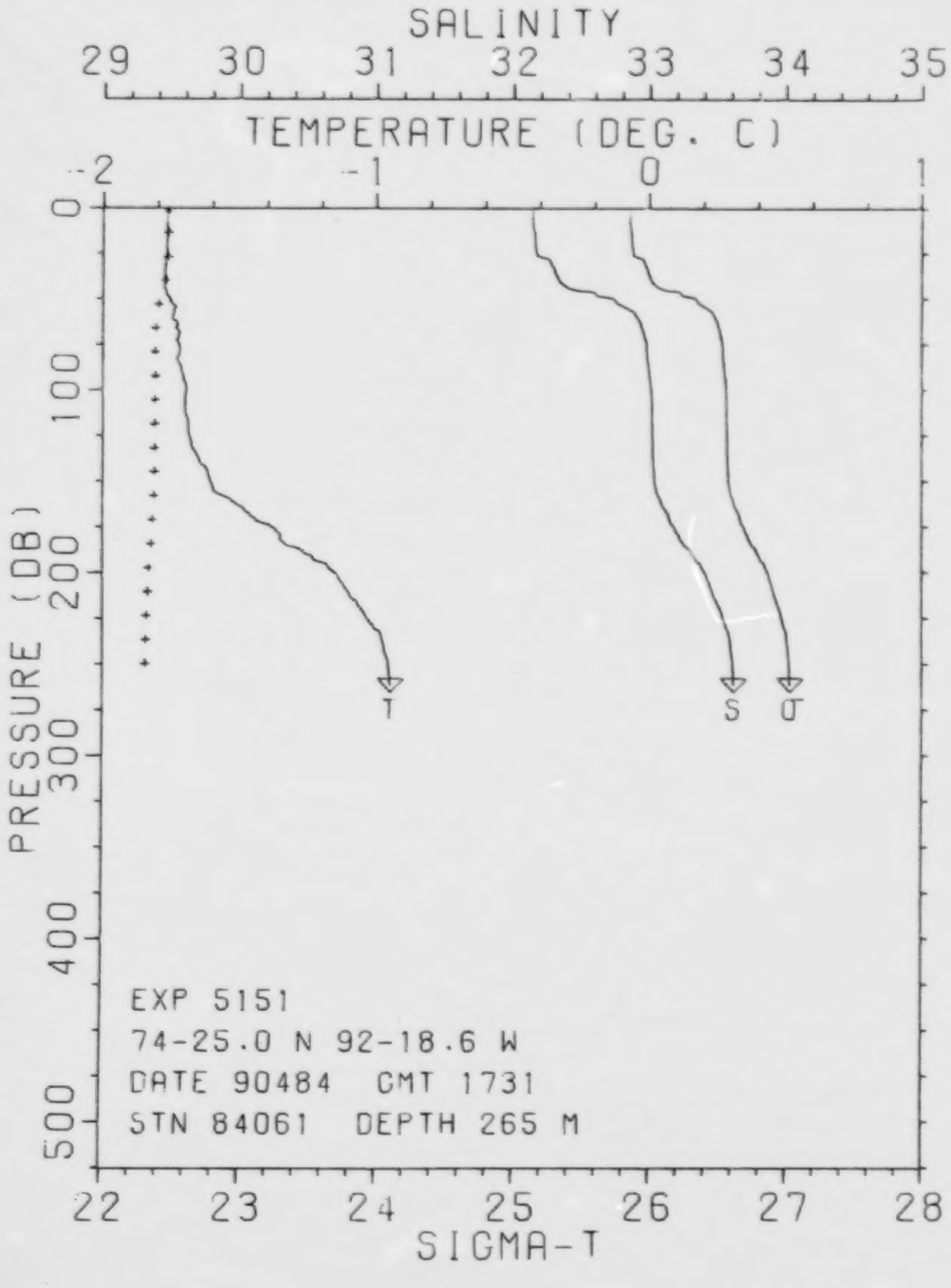
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
0
100
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500
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EXP 5151
74-25.0 N 92-18.6 W
DATE 90484 GMT 1731
STN 84061 DEPTH 265 M
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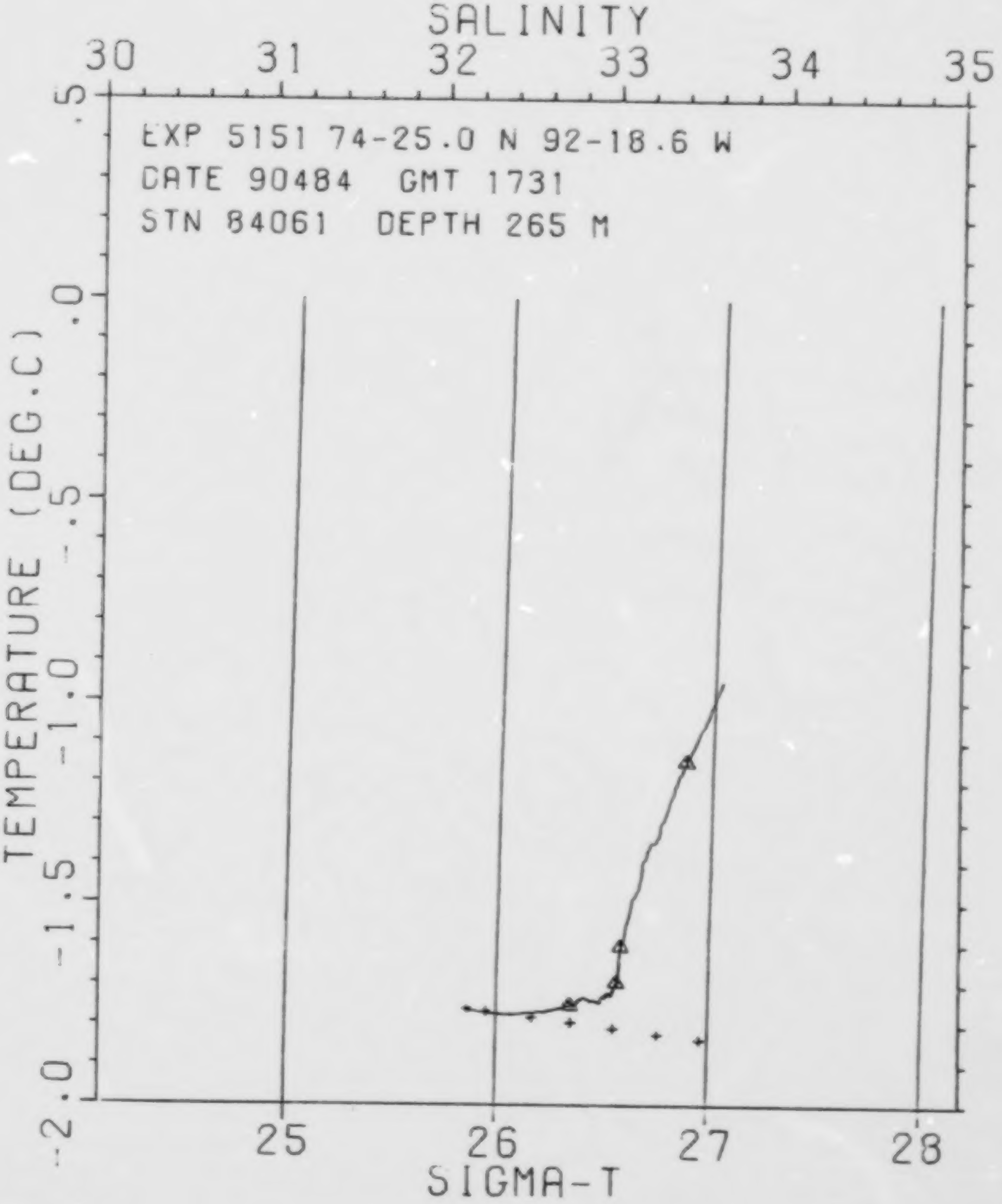
SIGMA-T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EXP 5151 74-25.0 N 92-18.6 W
DATE 90484 GMT 1731
STN 84061 DEPTH 265 M
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-1.5
-2.0
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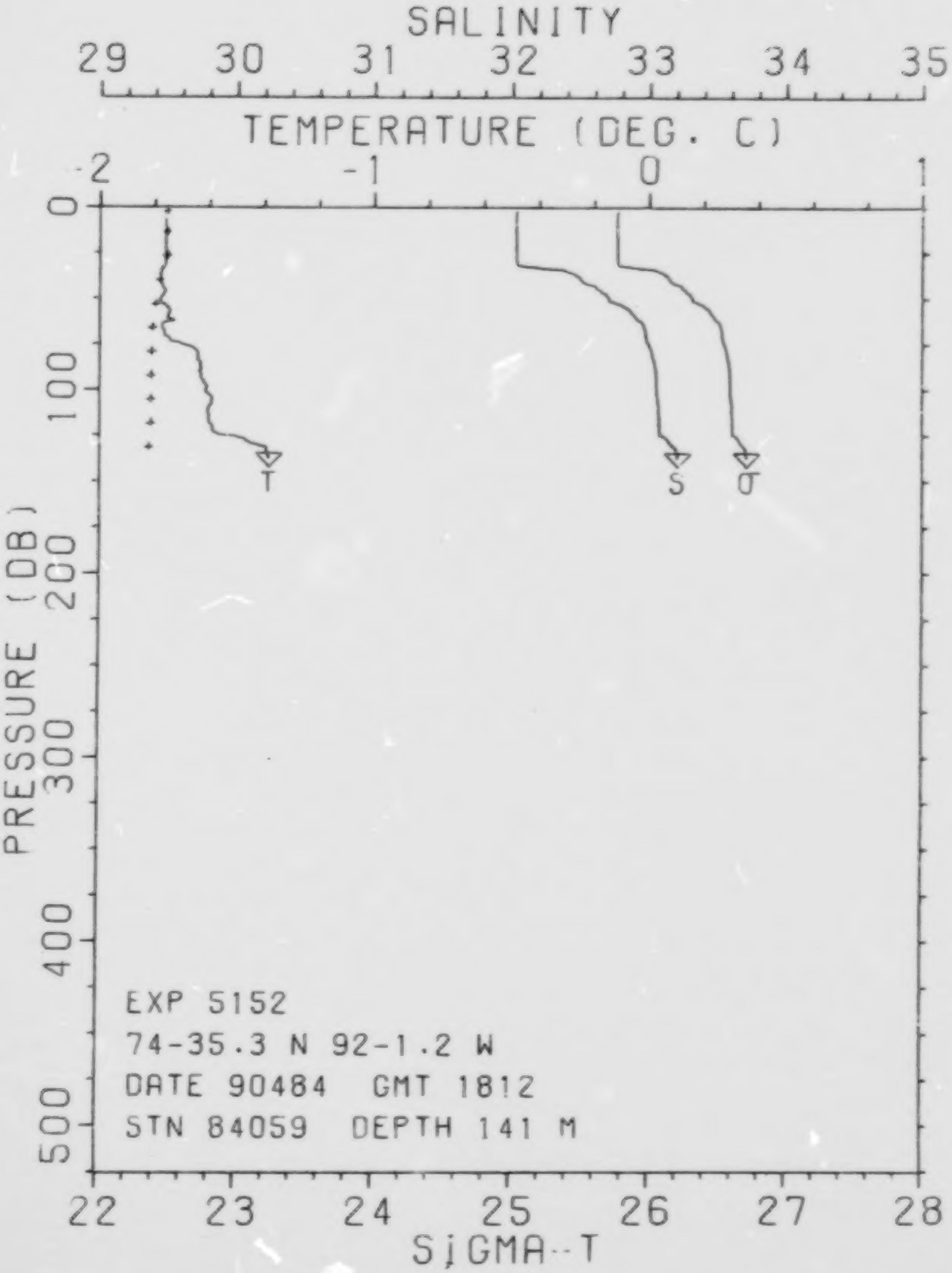
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
0
100
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300
400
500
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EXP 5152
74-35.3 N 92-1.2 W
DATE 90484 GMT 1812
STN 84059 DEPTH 141 M
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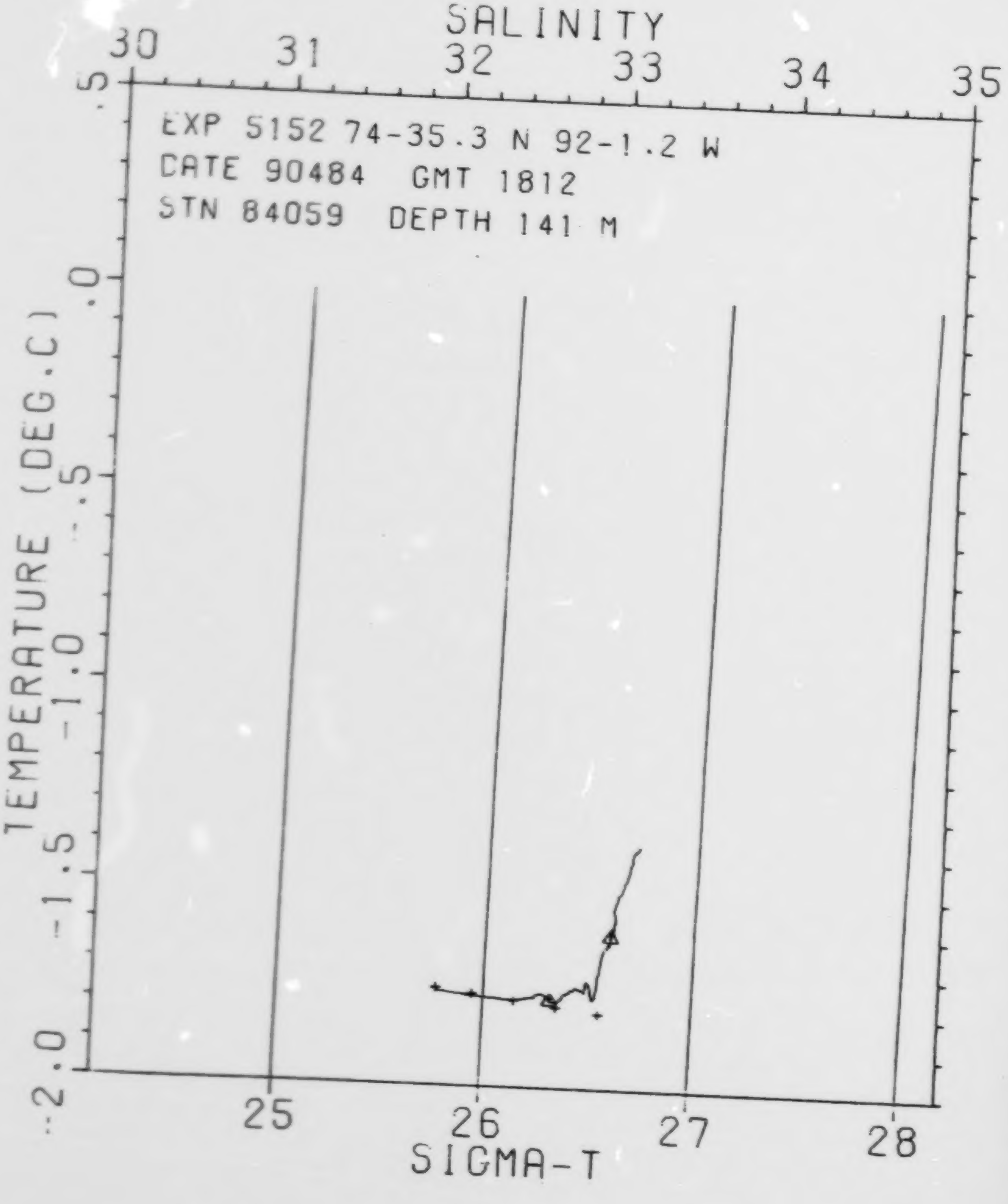
SIGMA-T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EXP 5152 74-35.3 N 92-1.2 W
DATE 90484 GMT 1812
STN 84059 DEPTH 141 M
TEMPERATURE (DEG.C)
.5
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-1.5
-2.0
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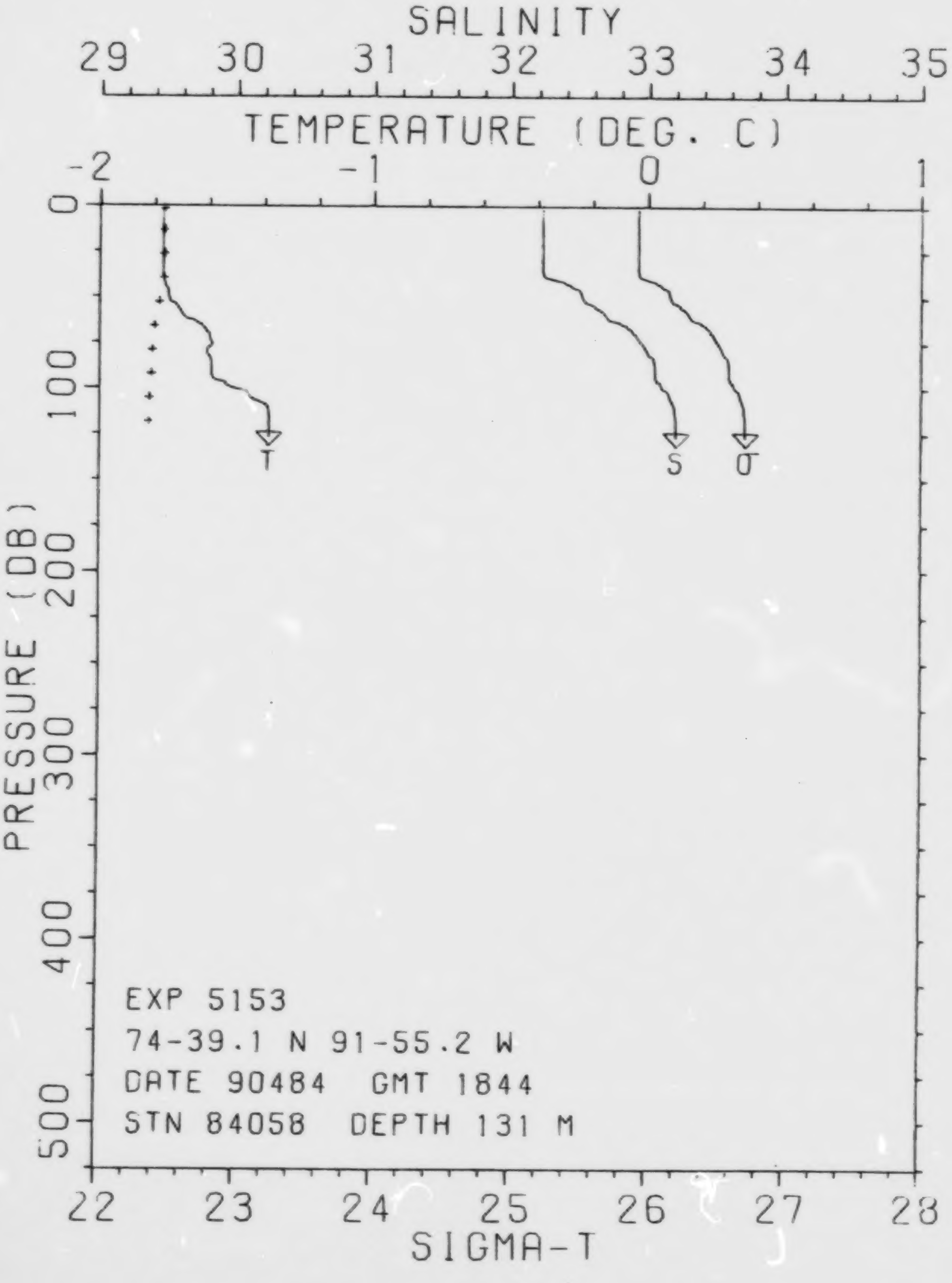
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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100
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EXP 5153
74-39.1 N 91-55.2 W
DATE 90484 GMT 1844
STN 84058 DEPTH 131 M
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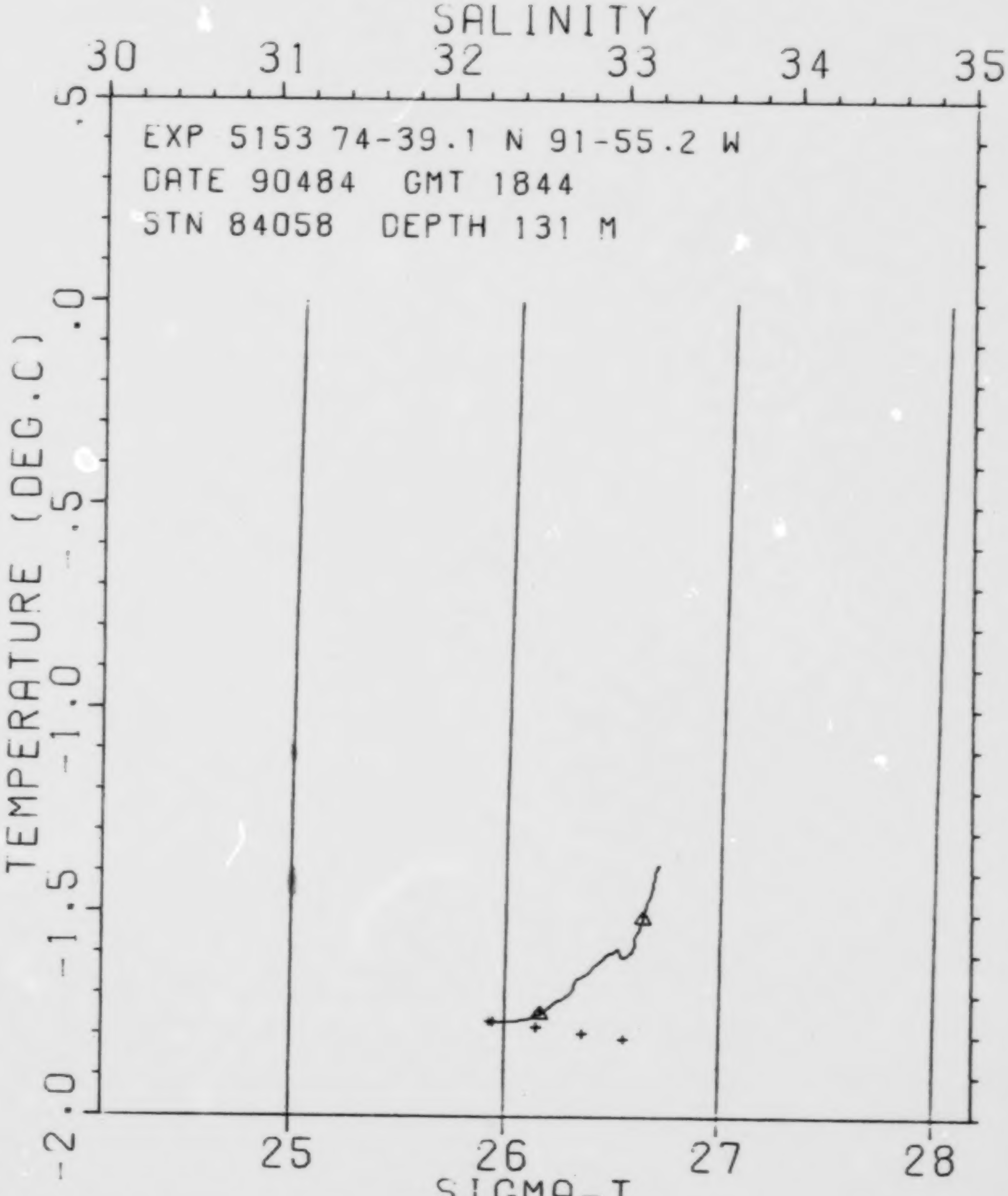
SIGMA-T


SALINITY
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EXP 5153 74-39.1 N 91-55.2 W
DATE 90484 GMT 1844
STN 84058 DEPTH 131 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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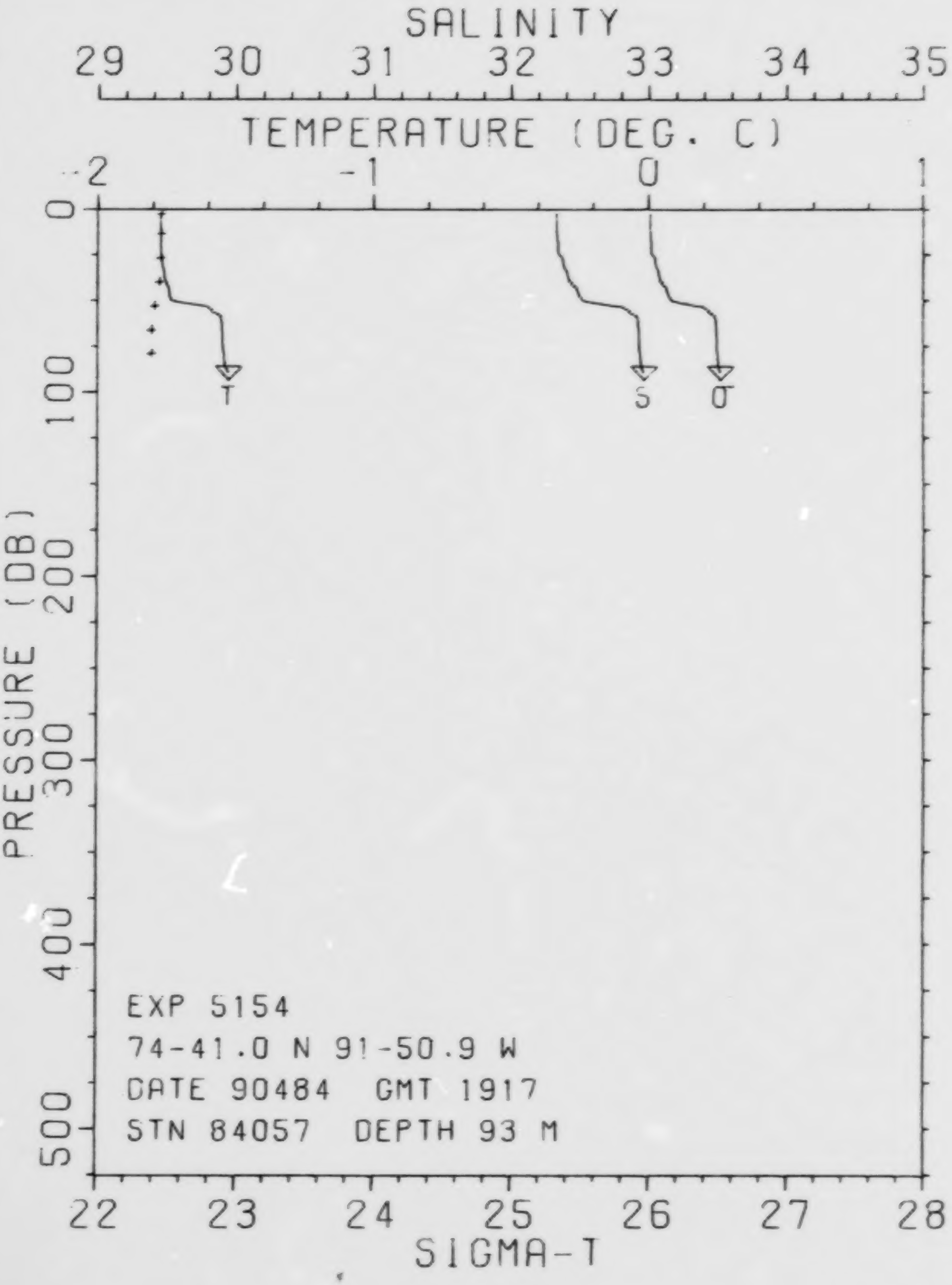
SIGMA-T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TEMPERATURE (DEG. C)
-2
-1
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1
PRESSURE (DB)
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100
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EXP 5154
74-41.0 N 91-50.9 W
DATE 90484 GMT 1917
STN 84057 DEPTH 93 M
22
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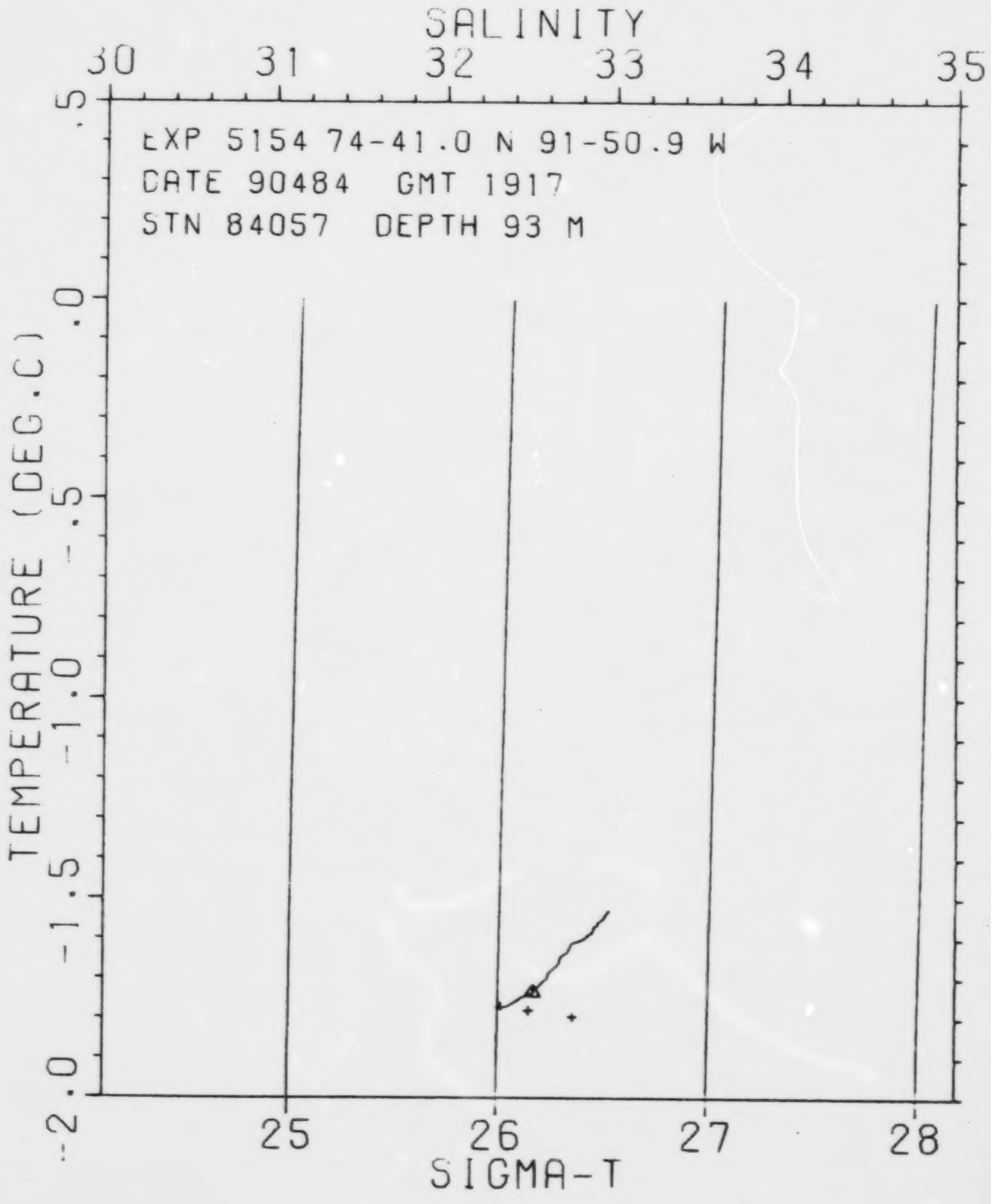
SIGMA-T


SALINITY
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EXP 5154 74-41.0 N 91-50.9 W
DATE 90484 GMT 1917
STN 84057 DEPTH 93 M
TEMPERATURE (DEG.C)
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-2.0
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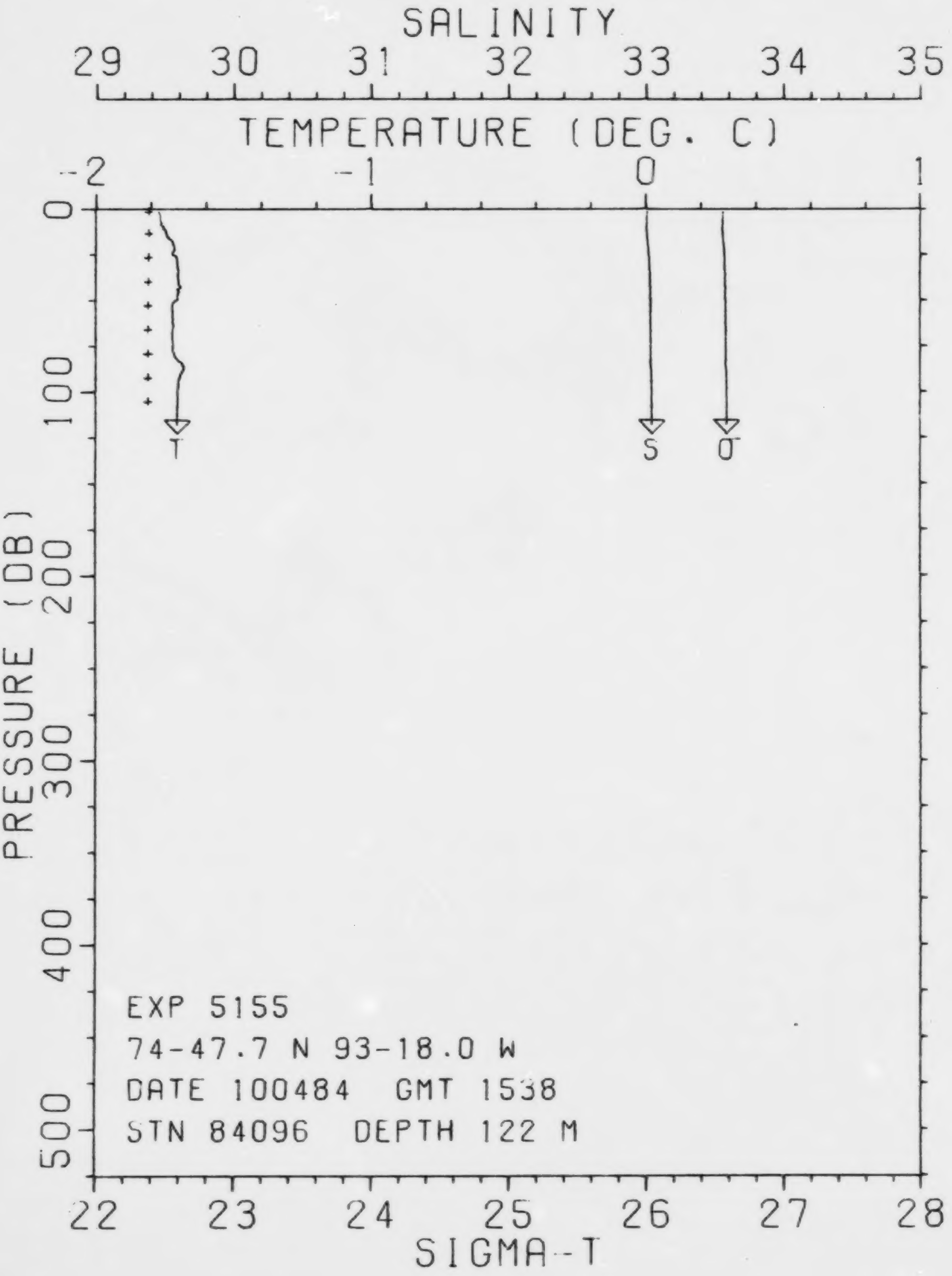
SIGMA-T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TEMPERATURE (DEG. C)
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0
1
PRESSURE (DB)
0
100
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EXP 5155
74-47.7 N 93-18.0 W
DATE 100484 GMT 1538
STN 84096 DEPTH 122 M
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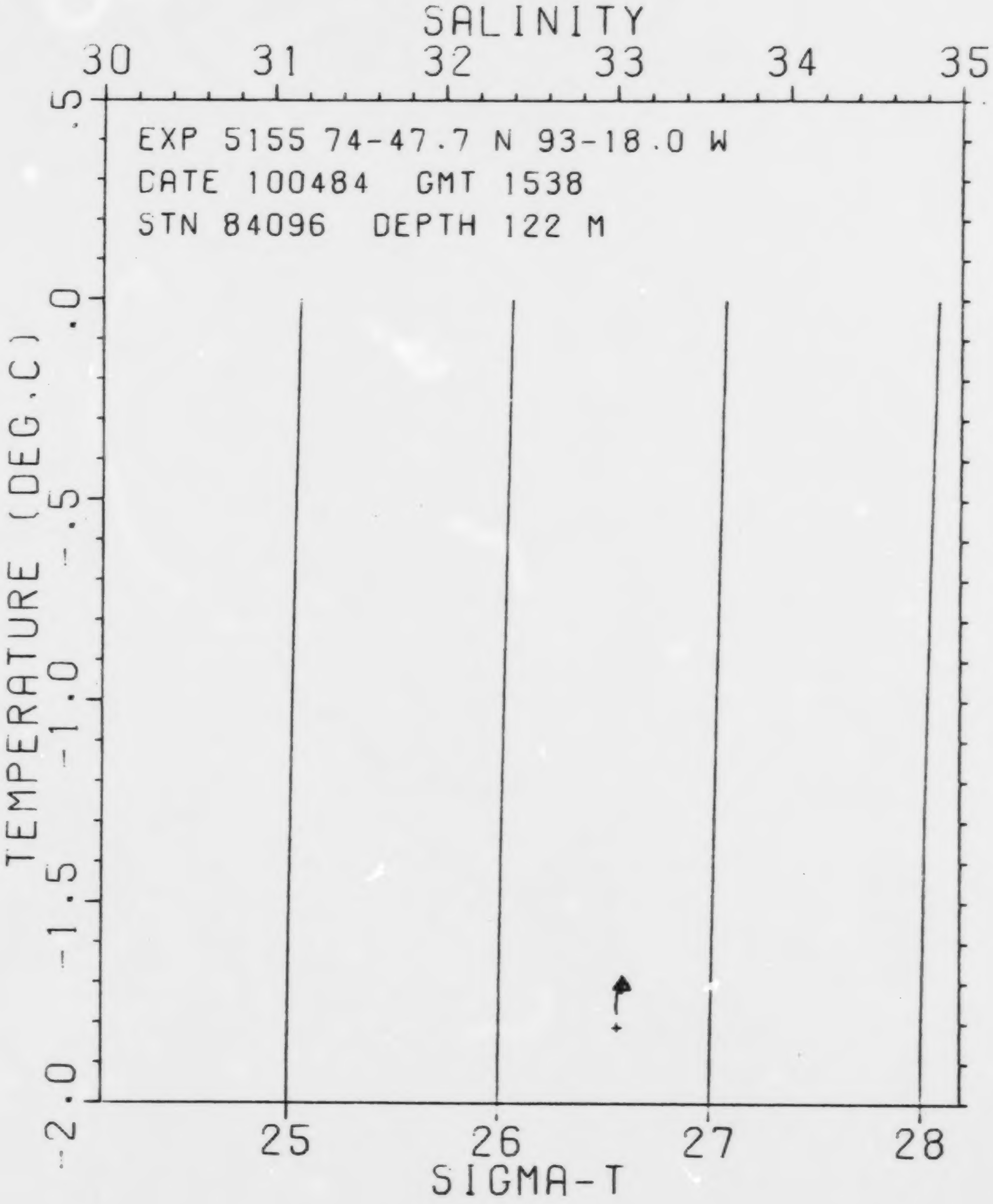
SIGMA-T


SALINITY
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33
34
35
EXP 5155 74-47.7 N 93-18.0 W
DATE 100484 GMT 1538
STN 84096 DEPTH 122 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
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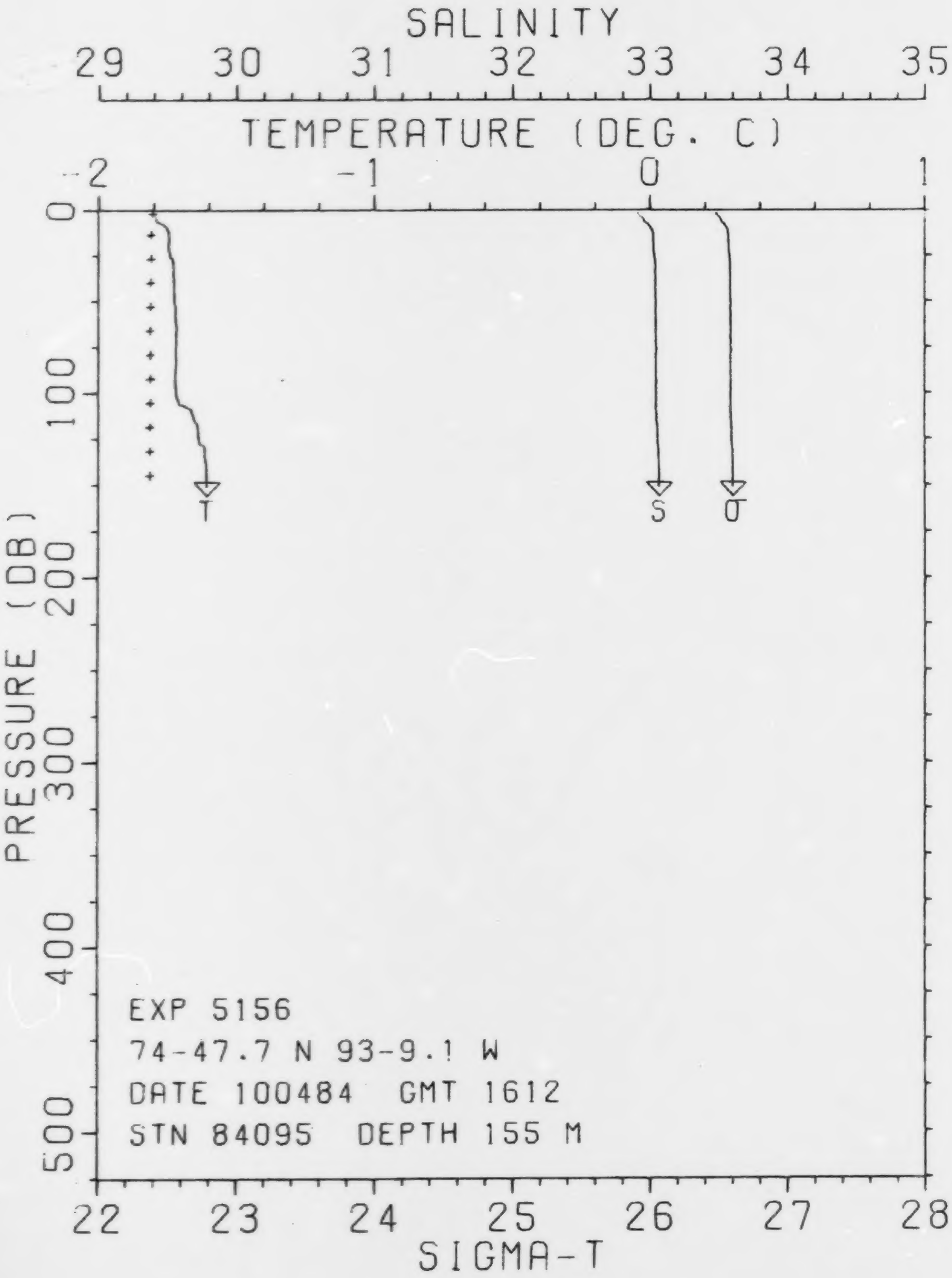
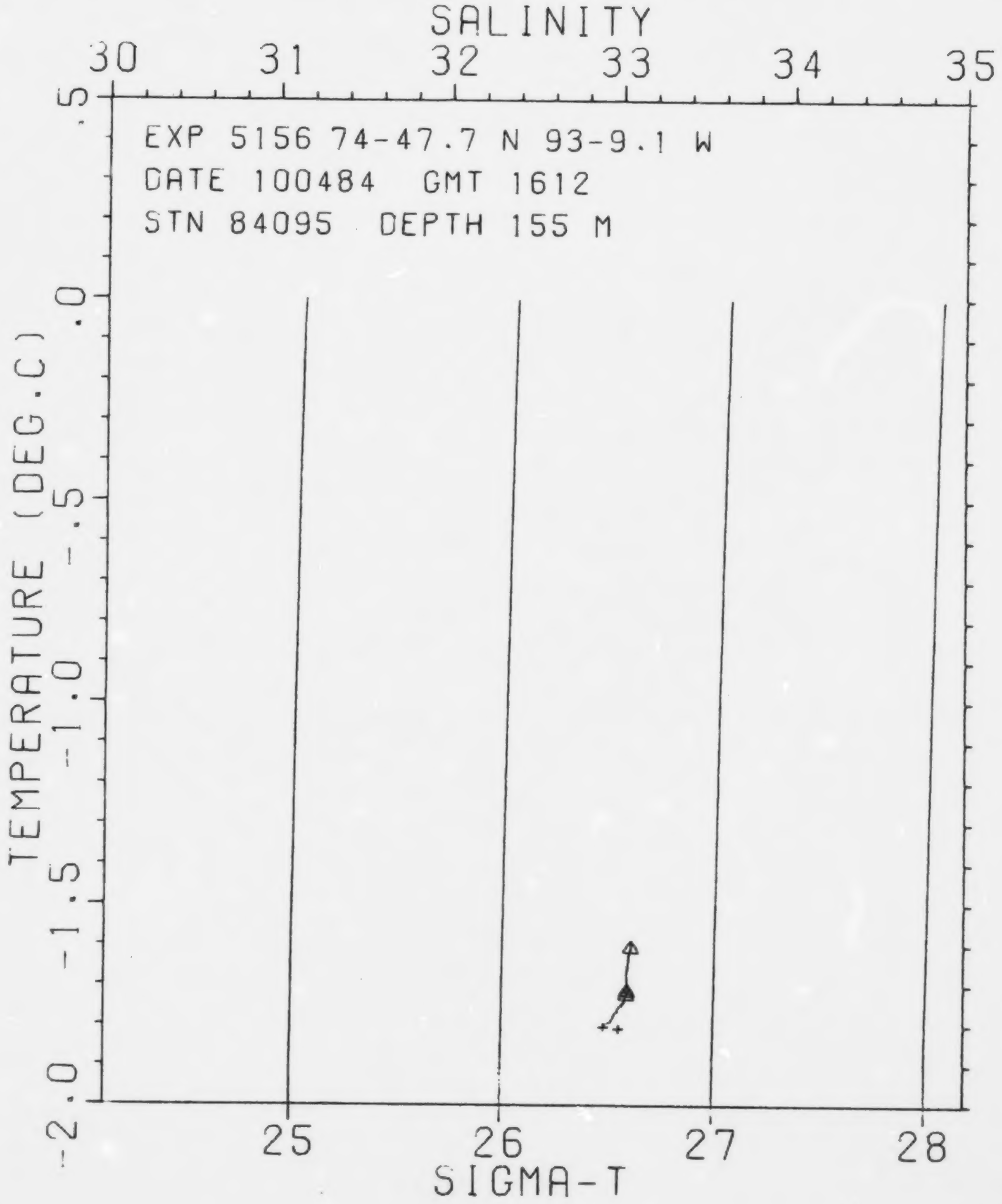
SIGMA-T



EXP 5156
74-47.7 N 93-9.1 W
DATE 100484 GMT 1612
STN 84095 DEPTH 155 M


SALINITY
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34
35
EXP 5156 74-47.7 N 93-9.1 W
DATE 100484 GMT 1612
STN 84095 DEPTH 155 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
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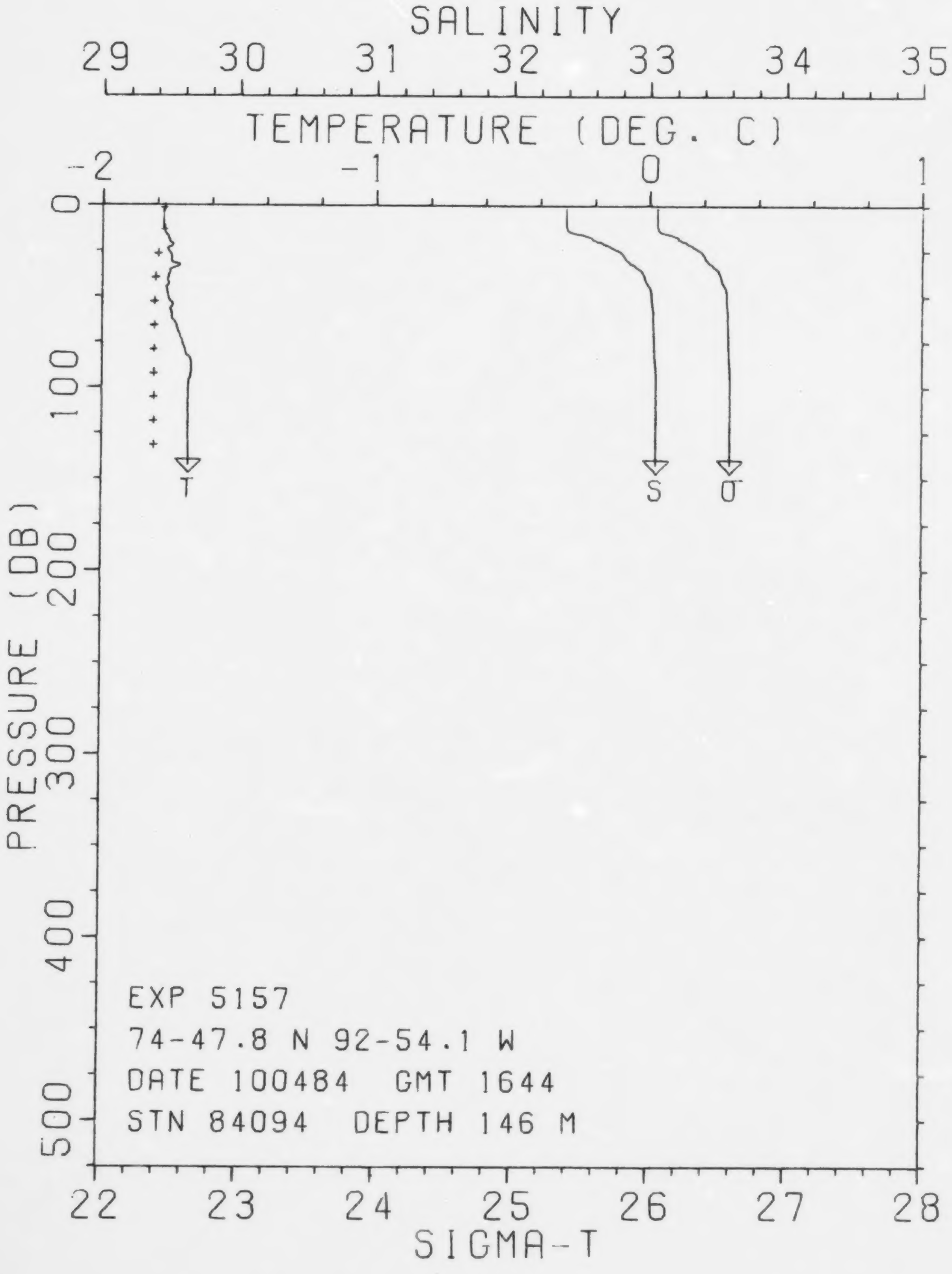
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
-2
-1
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PRESSURE (DB)
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EXP 5157
74-47.8 N 92-54.1 W
DATE 100484 GMT 1644
STN 84094 DEPTH 146 M
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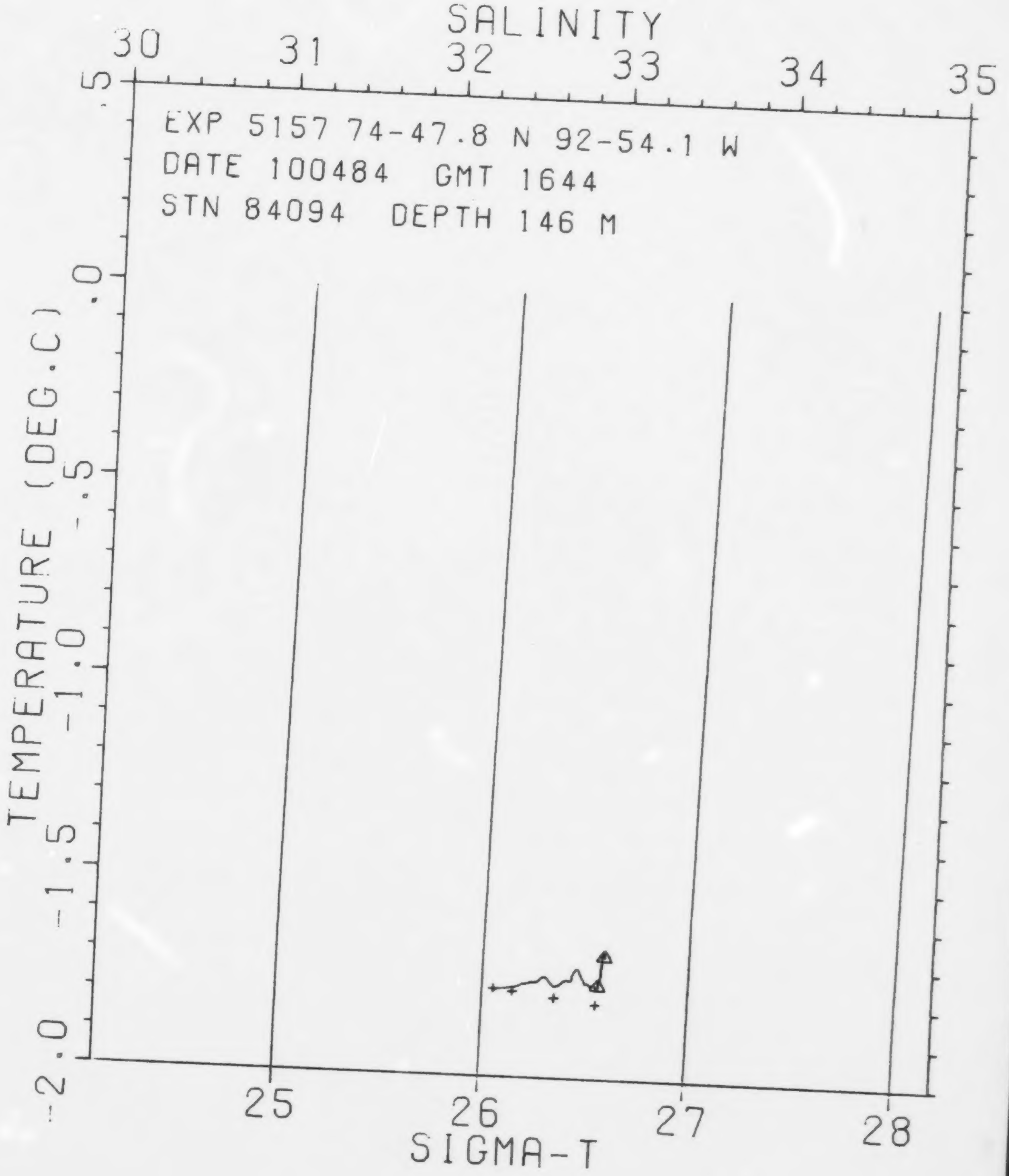
SIGMA-T


SALINITY
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35
EXP 5157 74-47.8 N 92-54.1 W
DATE 100484 GMT 1644
STN 84094 DEPTH 146 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
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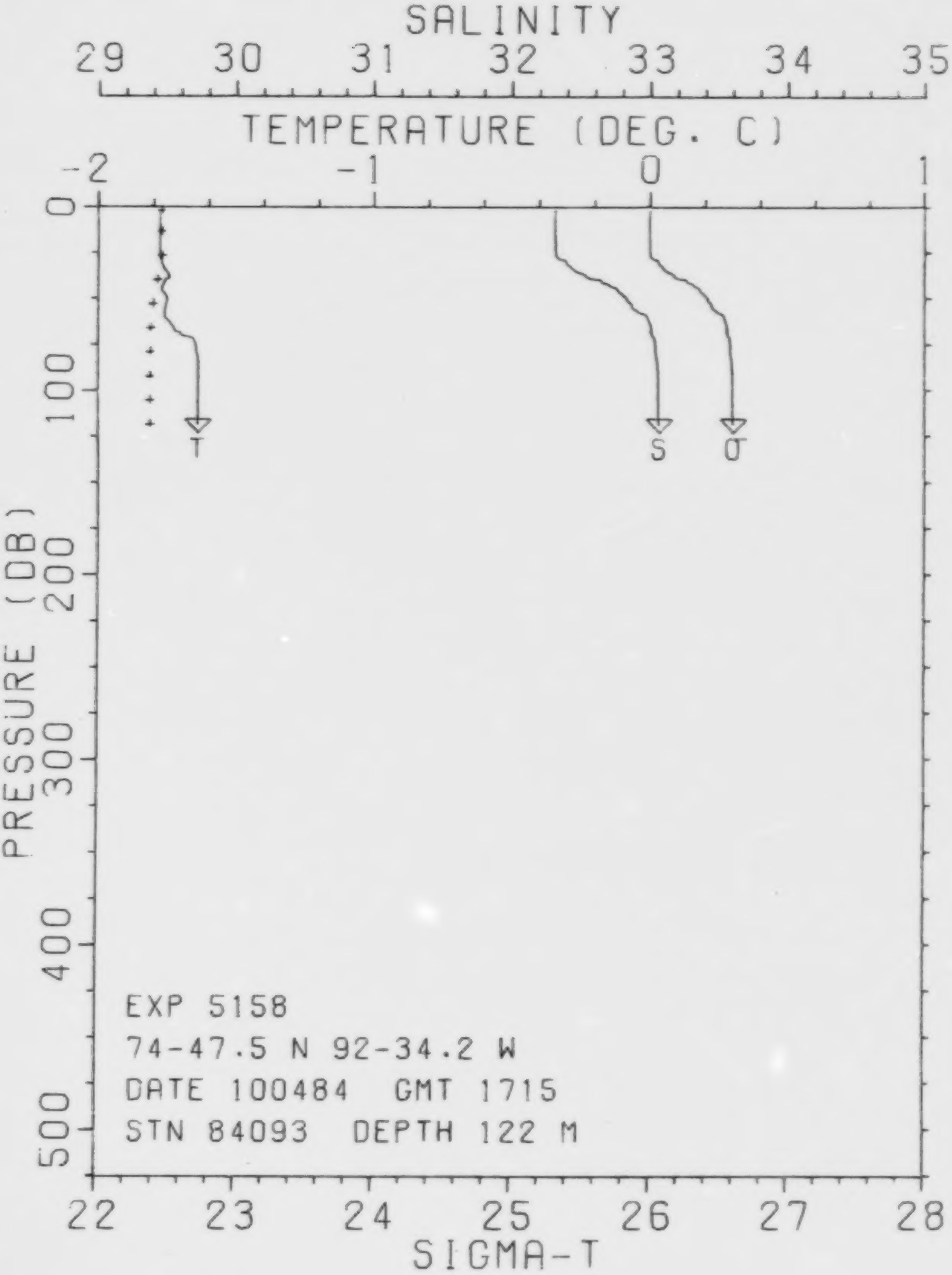
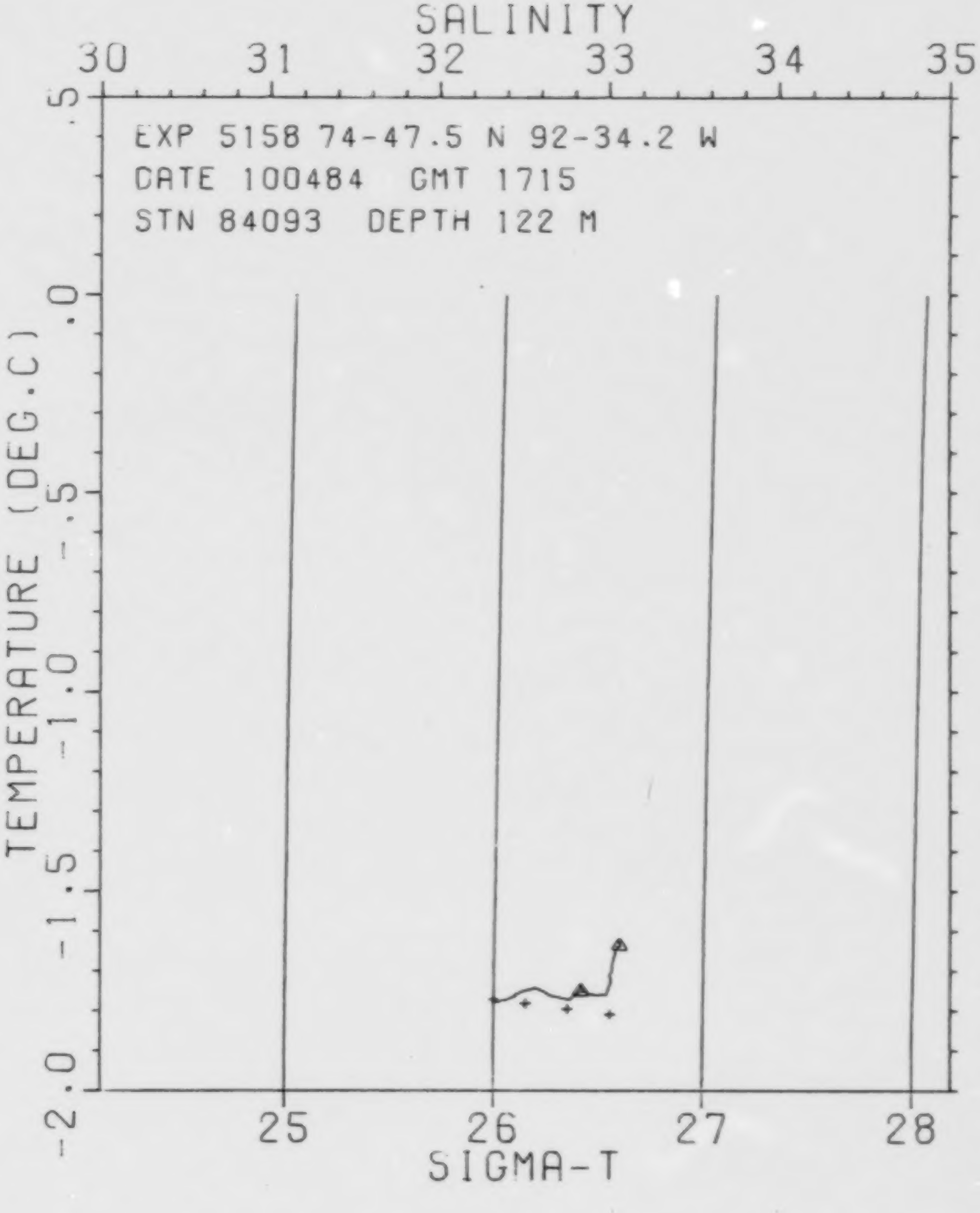
SIGMA-T



EXP 5158
74-47.5 N 92-34.2 W
DATE 100484 GMT 1715
STN 84093 DEPTH 122 M


SALINITY
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34
35
EXP 5158 74-47.5 N 92-34.2 W
DATE 100484 GMT 1715
STN 84093 DEPTH 122 M
TEMPERATURE (DEG.C)
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.0
-.5
-1.0
-1.5
-2.0
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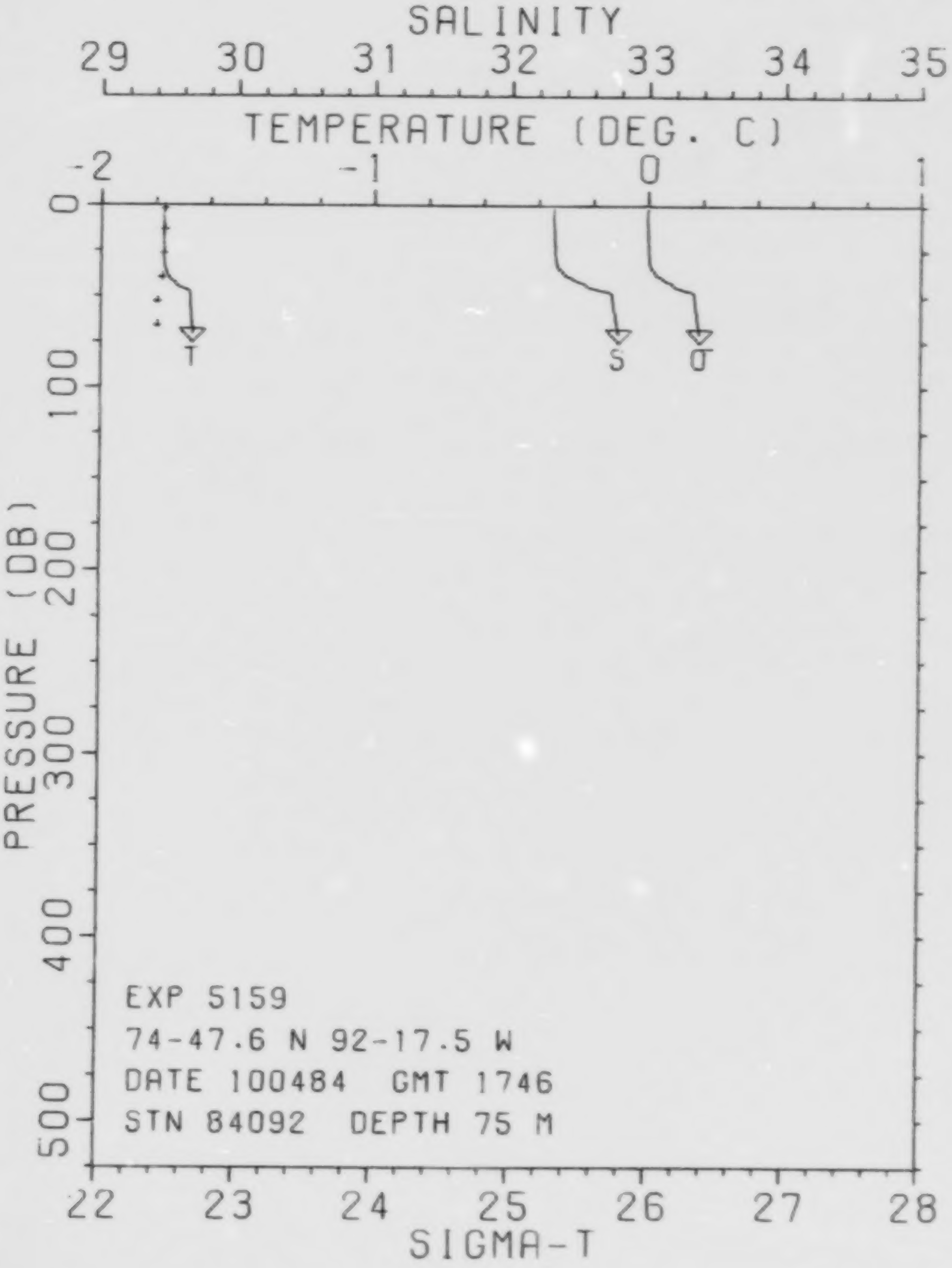
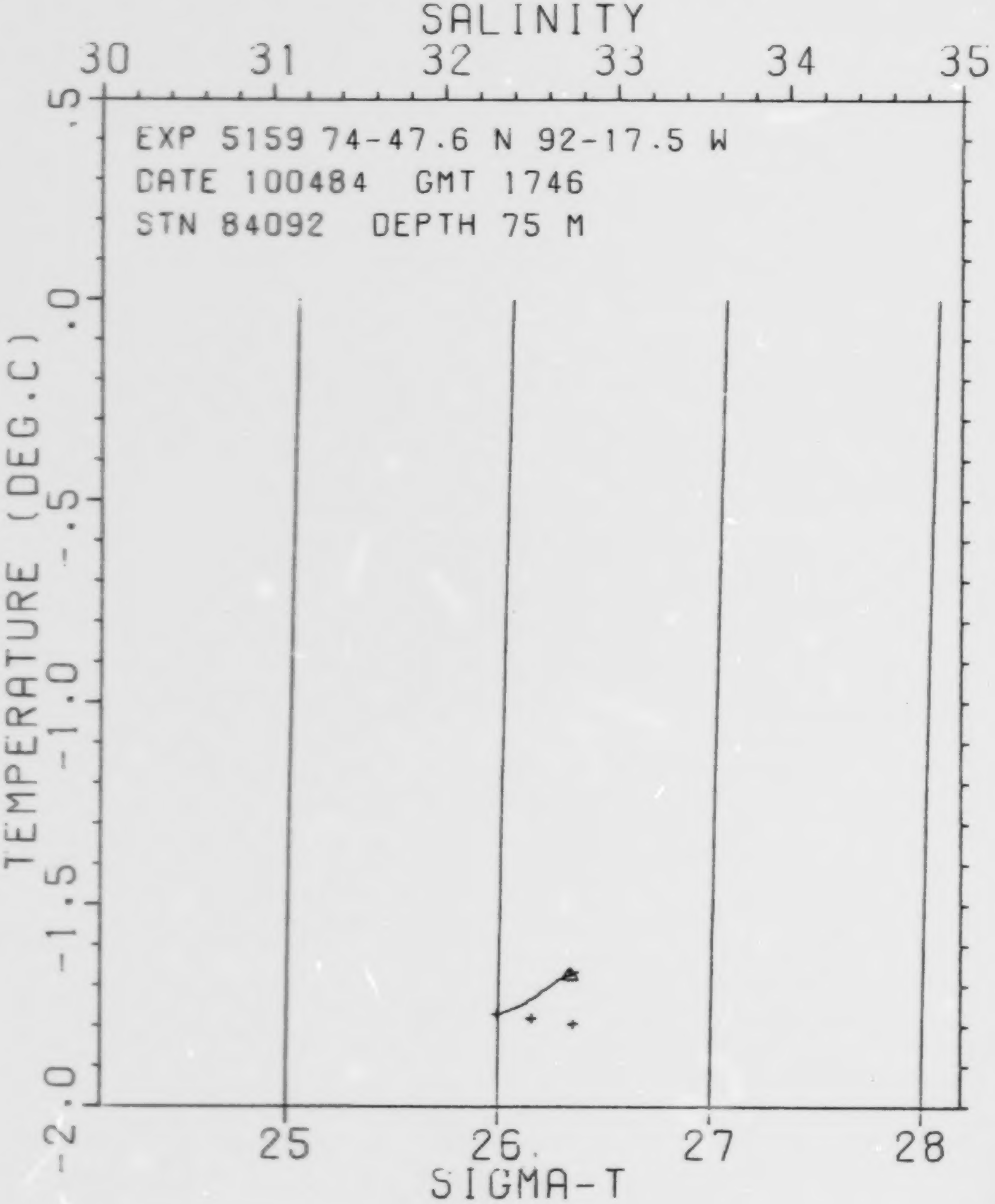
SIGMA-T



EXP 5159
74-47.6 N 92-17.5 W
DATE 100484 GMT 1746
STN 84092 DEPTH 75 M


SALINITY
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34
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EXP 5159 74-47.6 N 92-17.5 W
DATE 100484 GMT 1746
STN 84092 DEPTH 75 M
TEMPERATURE (DEG.C)
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.0
-.5
-1.0
-1.5
-2.0
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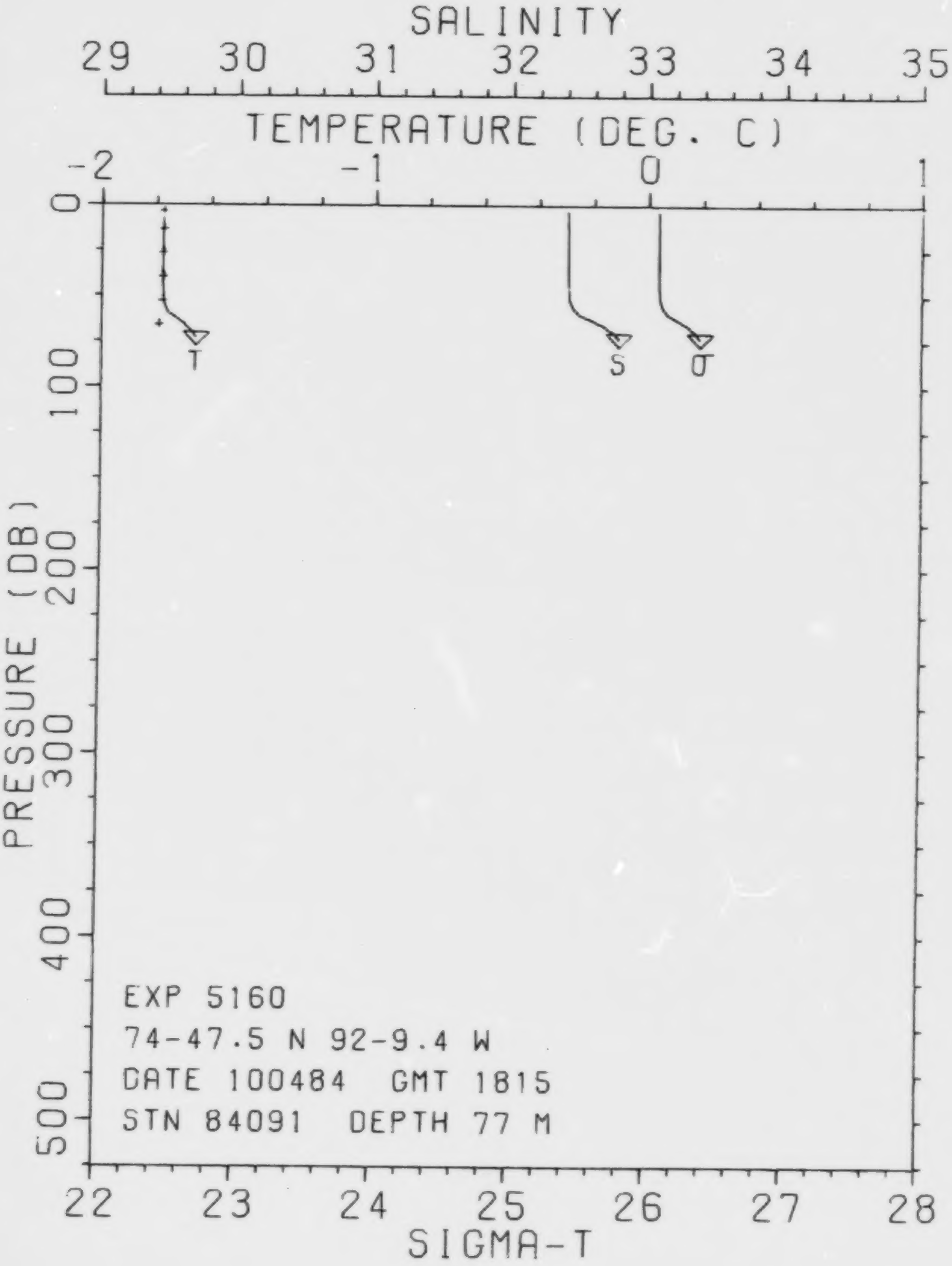
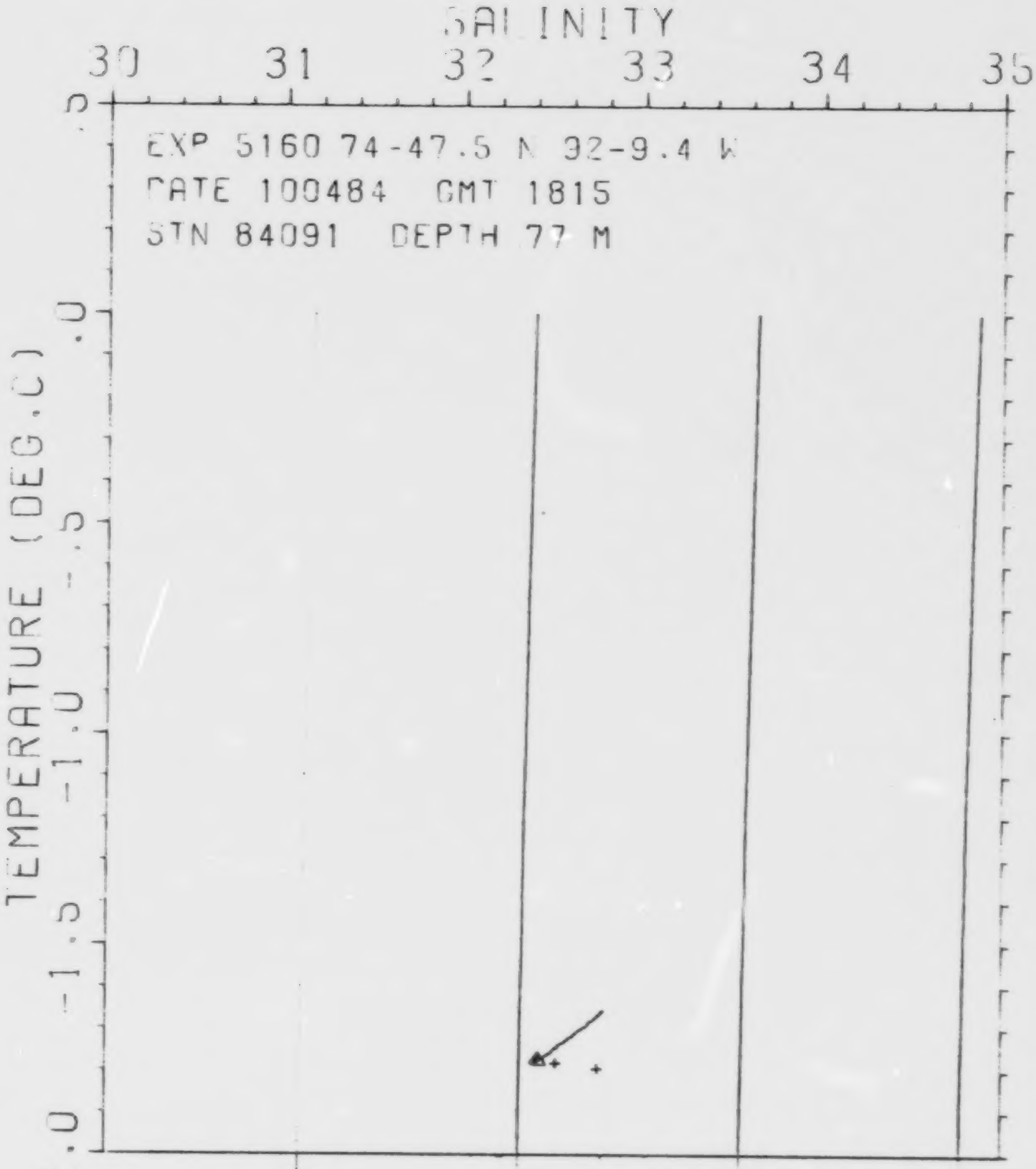
SIGMA-T



EXP 5160
74-47.5 N 92-9.4 W
DATE 100484 GMT 1815
STN 84091 DEPTH 77 M


SALINITY
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34
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EXP 5160 74-47.5 N 32-9.4 W
DATE 100484 GMT 1815
STN 84091 DEPTH 77 M
TEMPERATURE (DEG.C)
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-2.0
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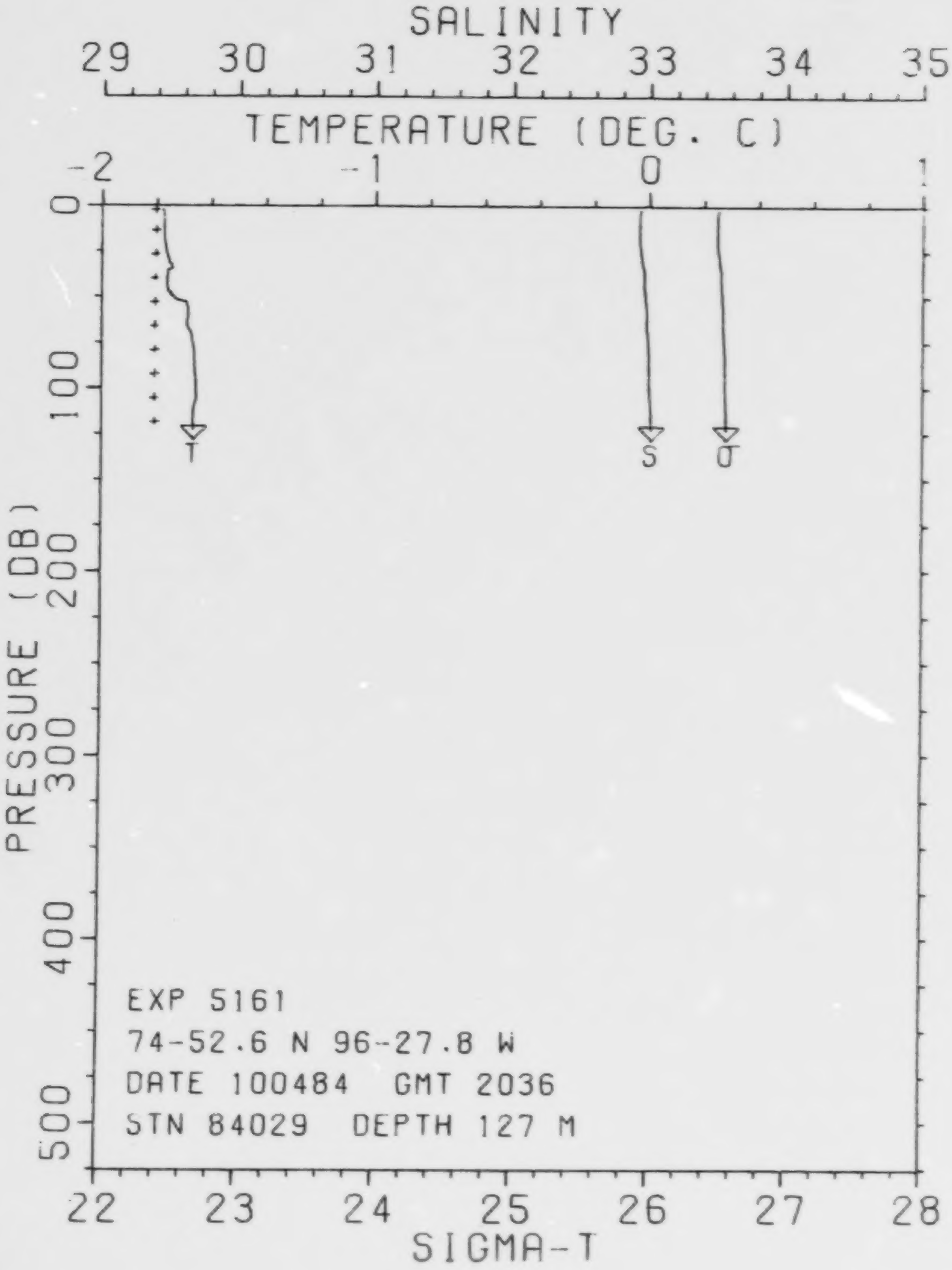
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5161
74-52.6 N 96-27.8 W
DATE 100484 GMT 2036
STN 84029 DEPTH 127 M
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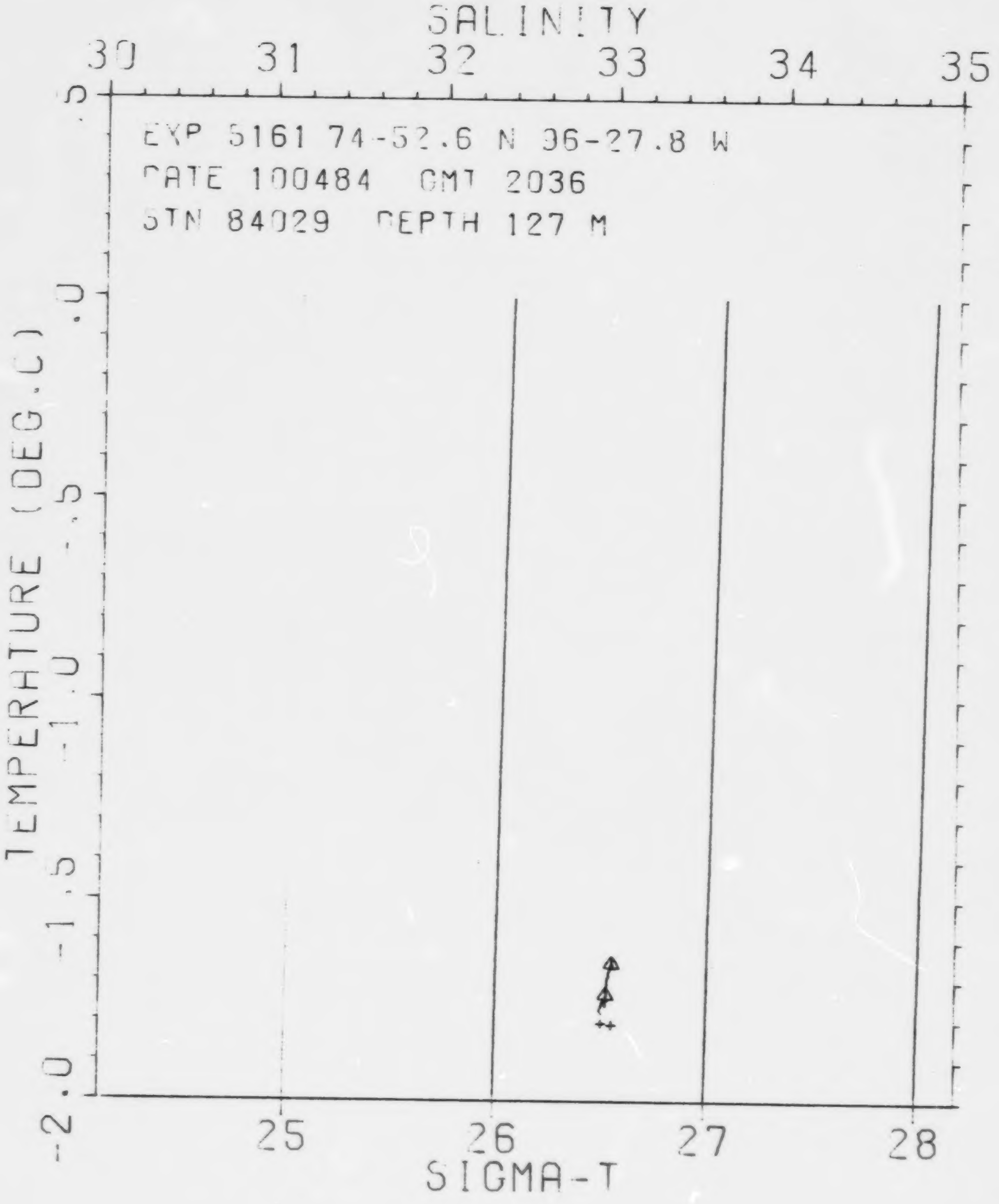
SIGMA-T


SALINITY
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33
34
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.0
-.5
-1.0
-1.5
-2.0
TEMPERATURE (DEG.C)
EXP 5161 74-52.6 N 96-27.8 W
DATE 100484 GMT 2036
STN 84029 DEPTH 127 M
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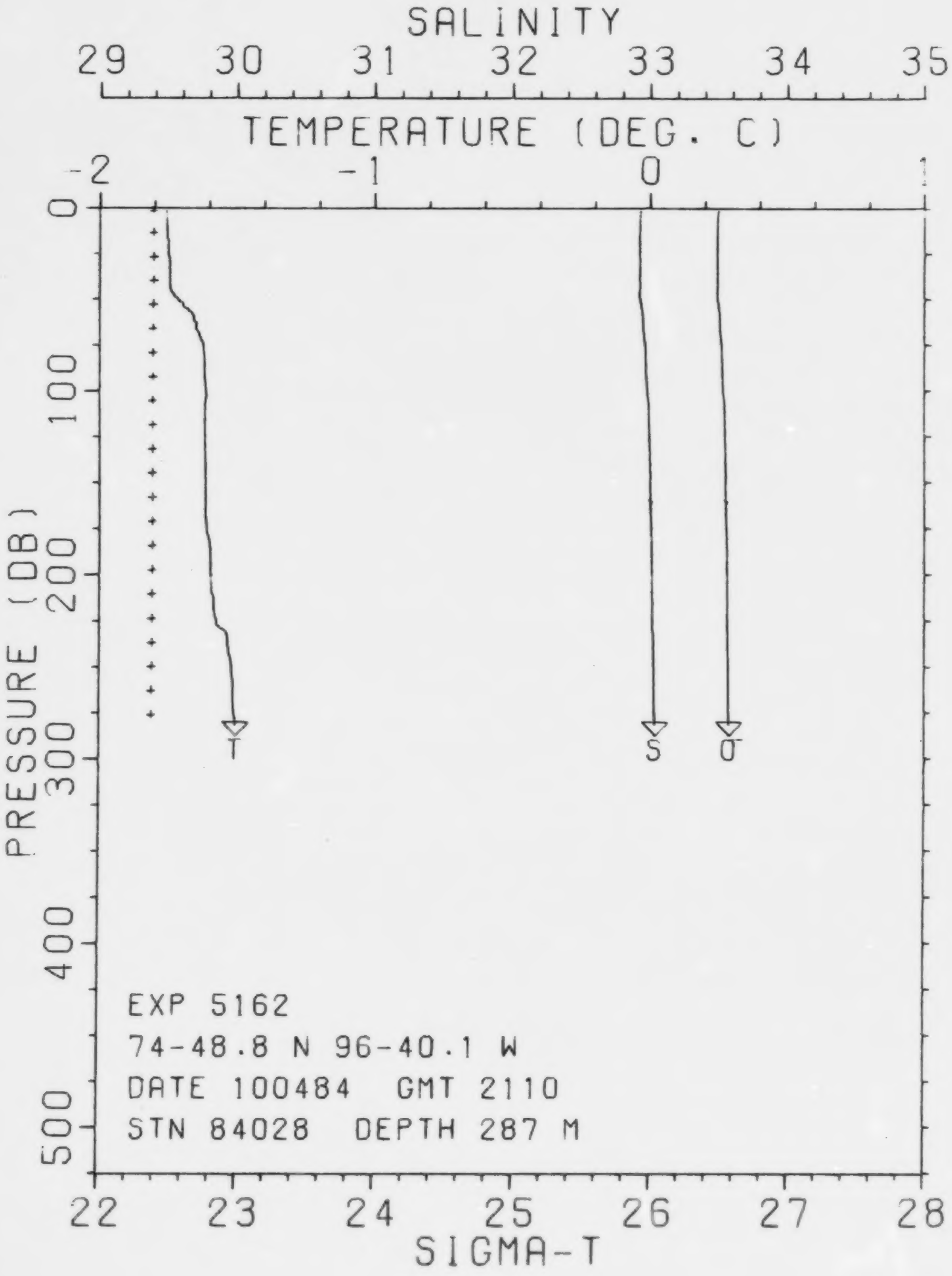
26
27
28
SIGMA-T


SALINITY
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31
32
33
34
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TEMPERATURE (DEG. C)
-2
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0
1
PRESSURE (DB)
0
100
200
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400
500
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EXP 5162
74-48.8 N 96-40.1 W
DATE 100484 GMT 2110
STN 84028 DEPTH 287 M
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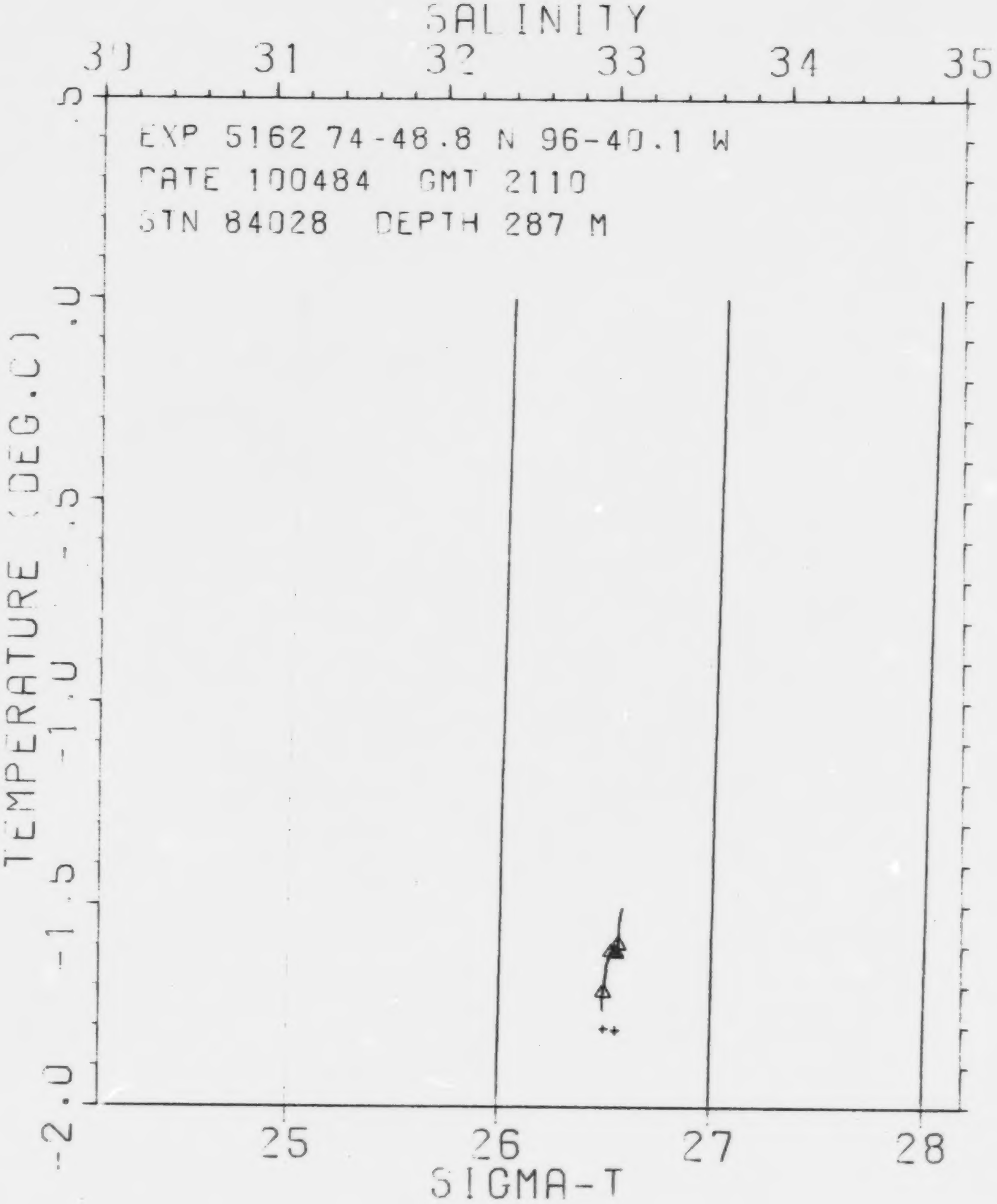
SIGMA-T


SALINITY
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EXP 5162 74-48.8 N 96-40.1 W
DATE 100484 GMT 2110
STN 84028 DEPTH 287 M
TEMPERATURE (DEG.C)
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-1.5
-2.0
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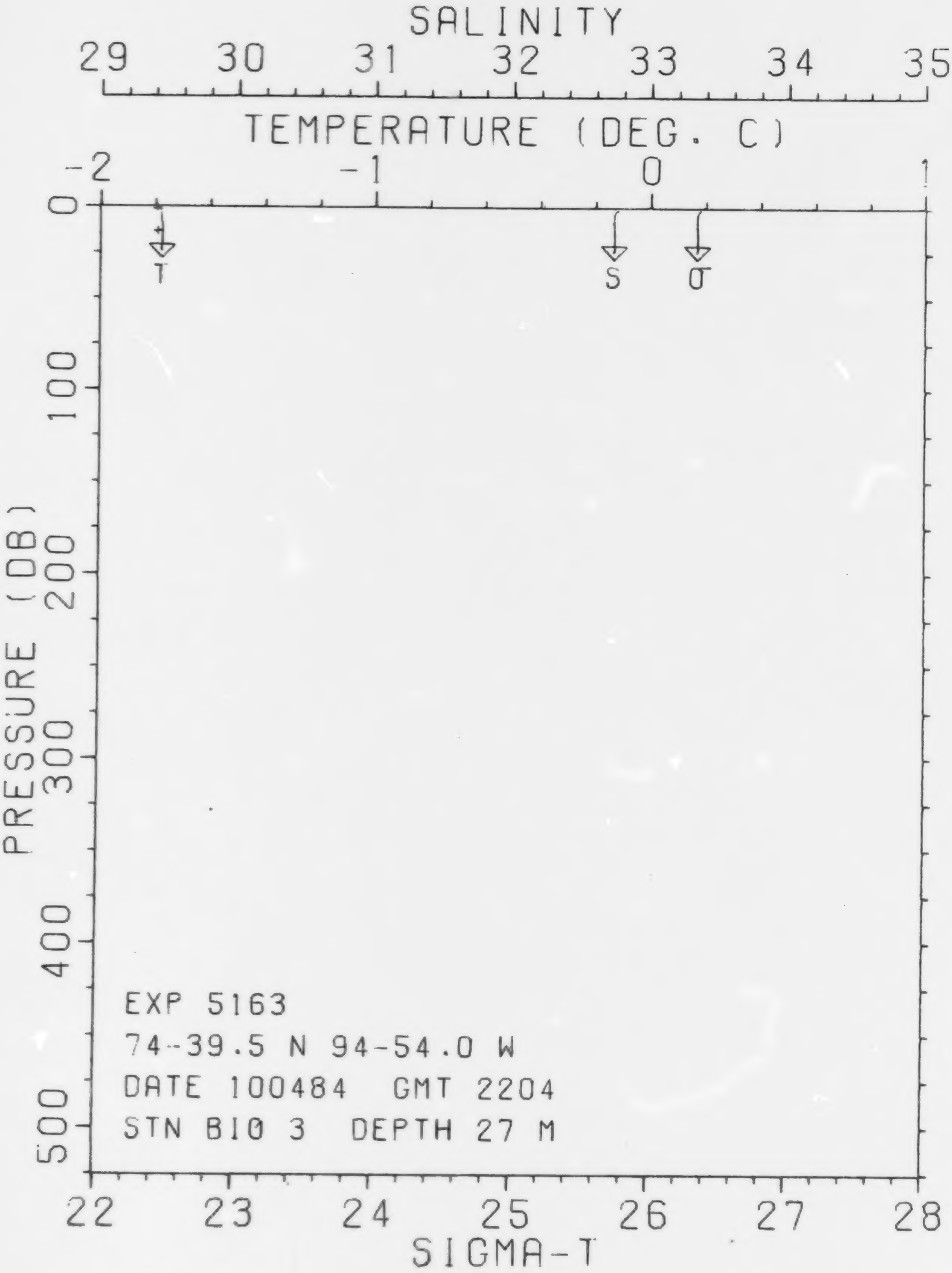
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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300
400
500
PRESSURE (DB)
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EXP 5163
74-39.5 N 94-54.0 W
DATE 100484 GMT 2204
STN BIO 3 DEPTH 27 M
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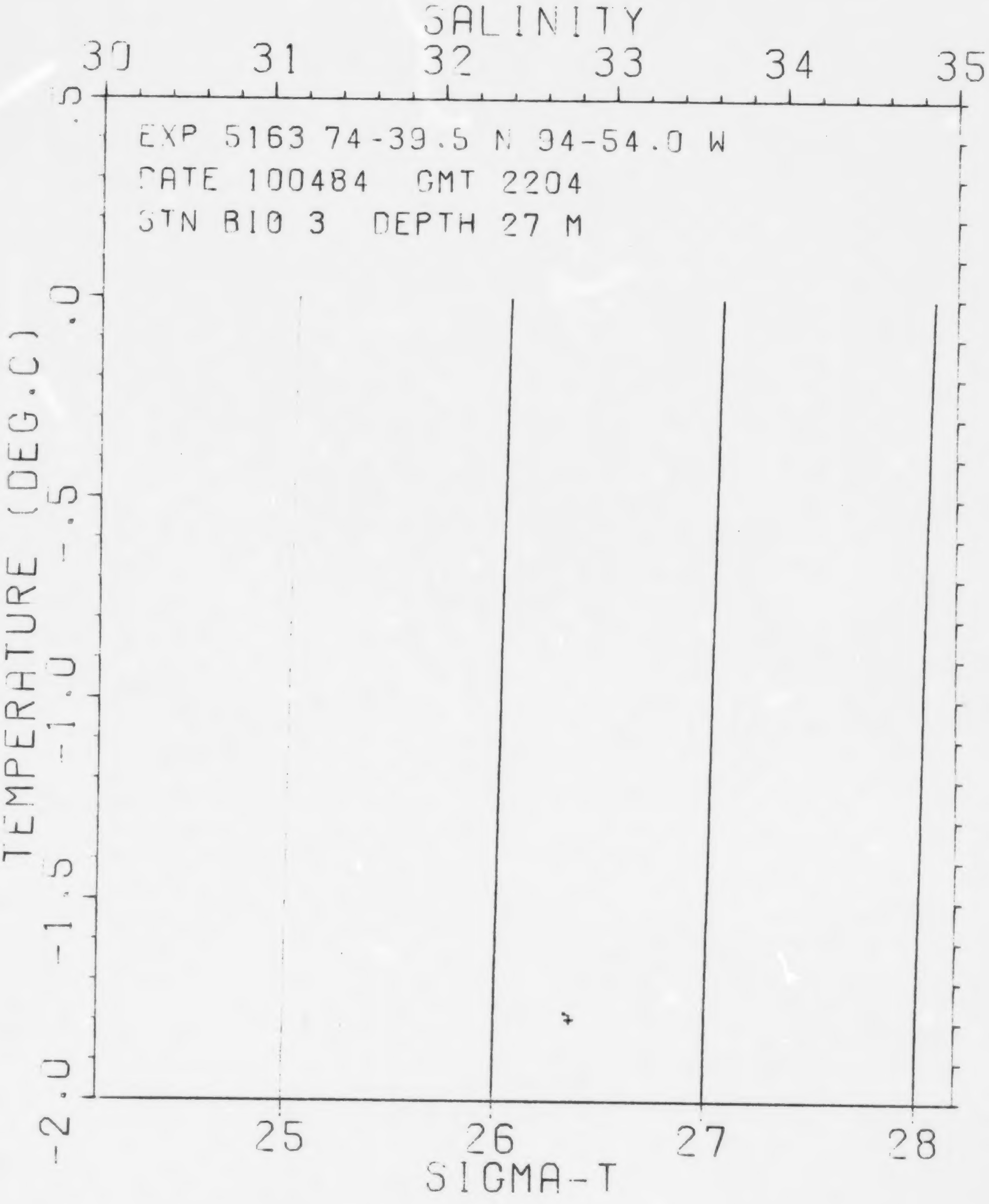
SIGMA-T


SALINITY
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35
EXP 5163 74-39.5 N 94-54.0 W
DATE 100484 GMT 2204
STN BIO 3 DEPTH 27 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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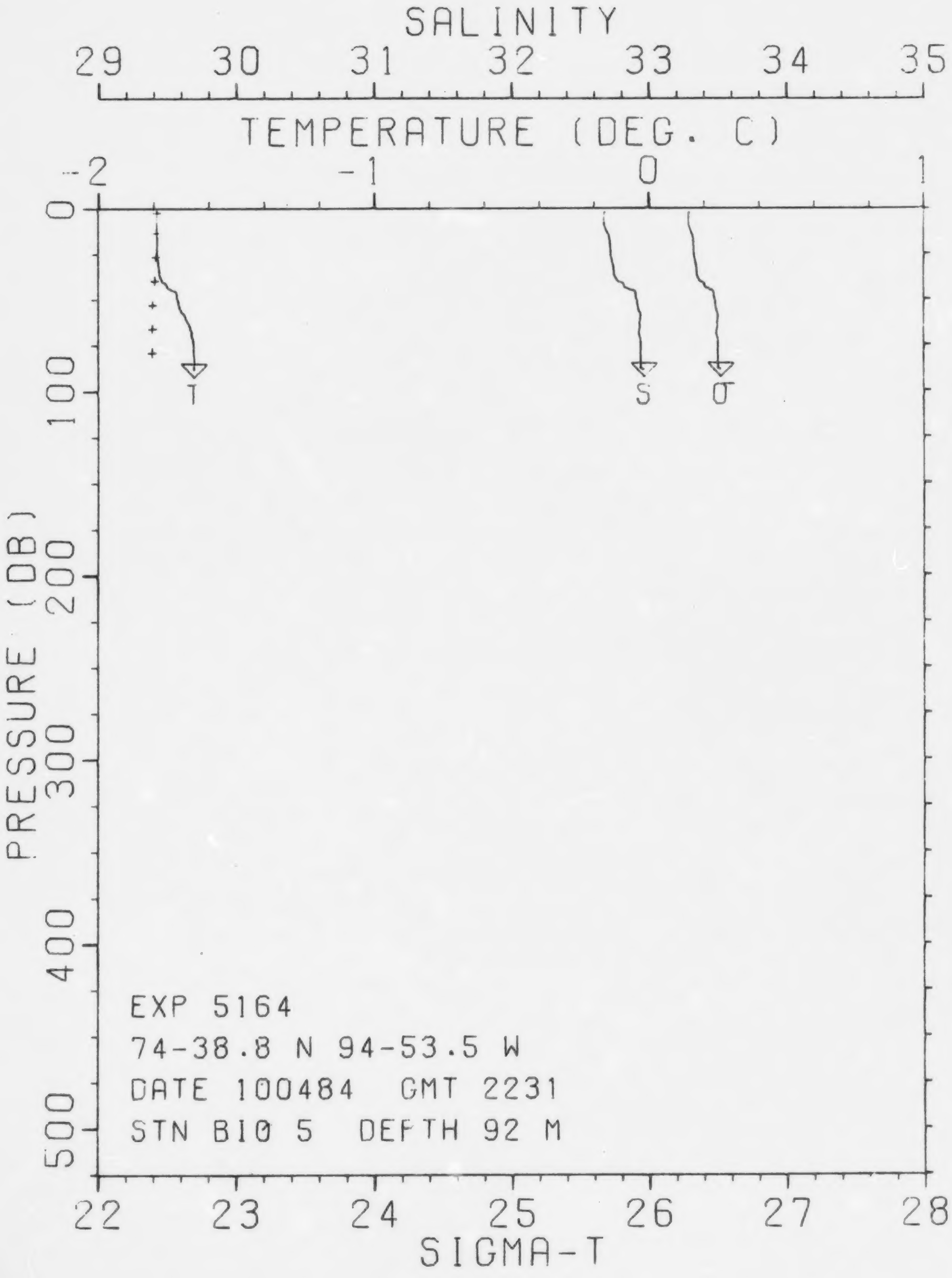
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5164
74-38.8 N 94-53.5 W
DATE 100484 GMT 2231
STN BIO 5 DEPTH 92 M
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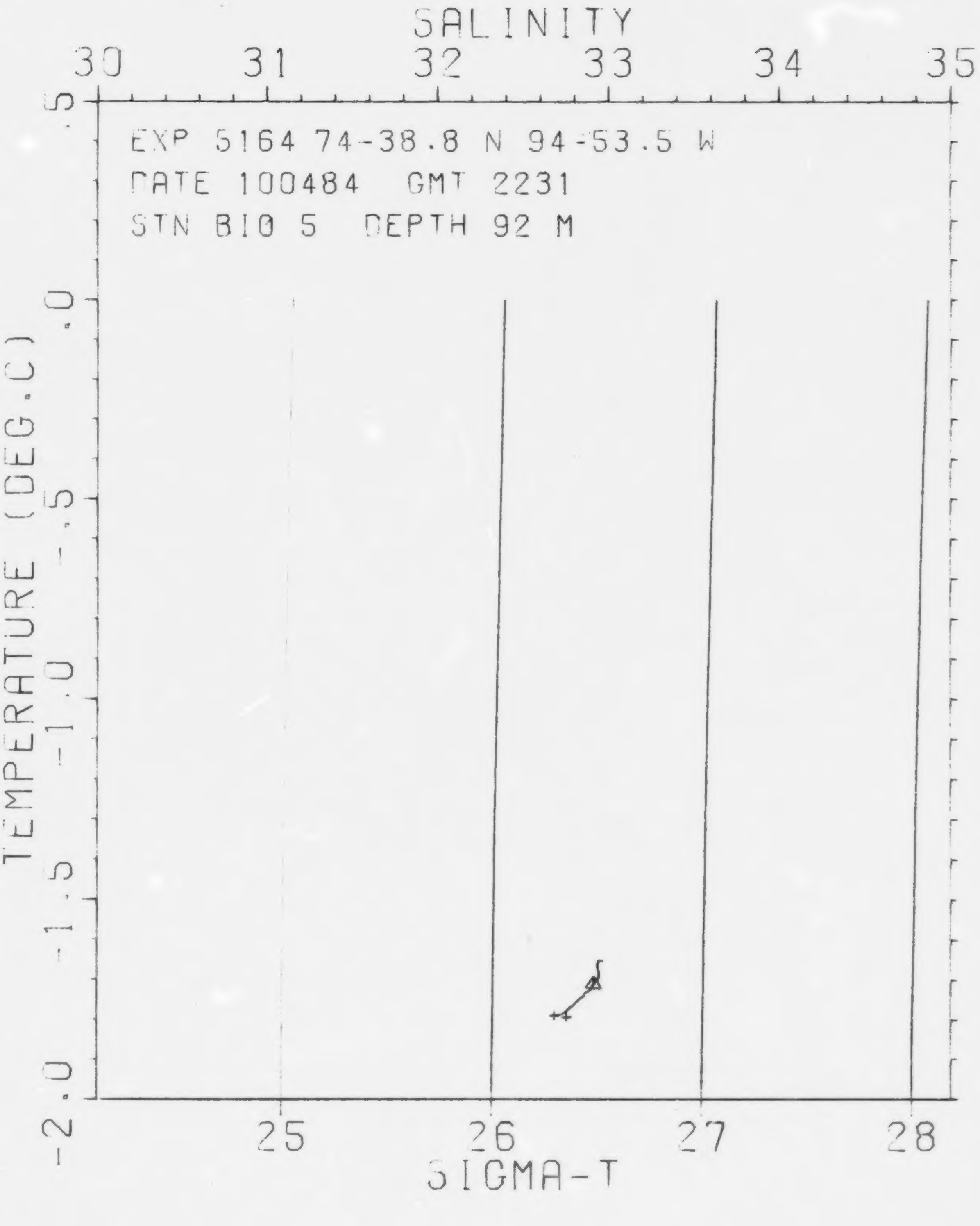
SIGMA-T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EXP 5164 74-38.8 N 94-53.5 W
DATE 100484 GMT 2231
STN BIO 5 DEPTH 92 M
TEMPERATURE (DEG.C)
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-2.0
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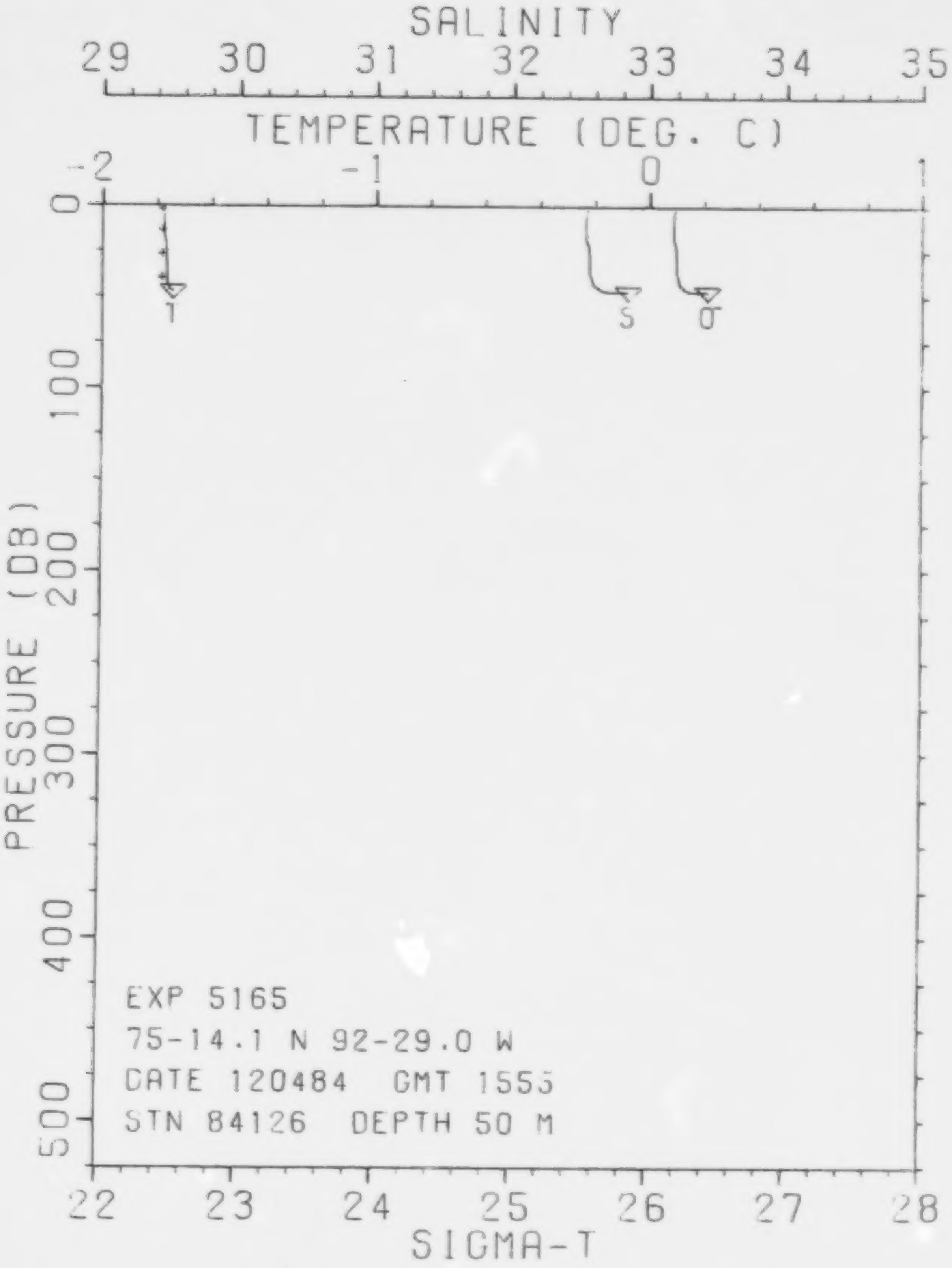
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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0
1
PRESSURE (DB)
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EXP 5165
75-14.1 N 92-29.0 W
DATE 120484 GMT 1555
STN 84126 DEPTH 50 M
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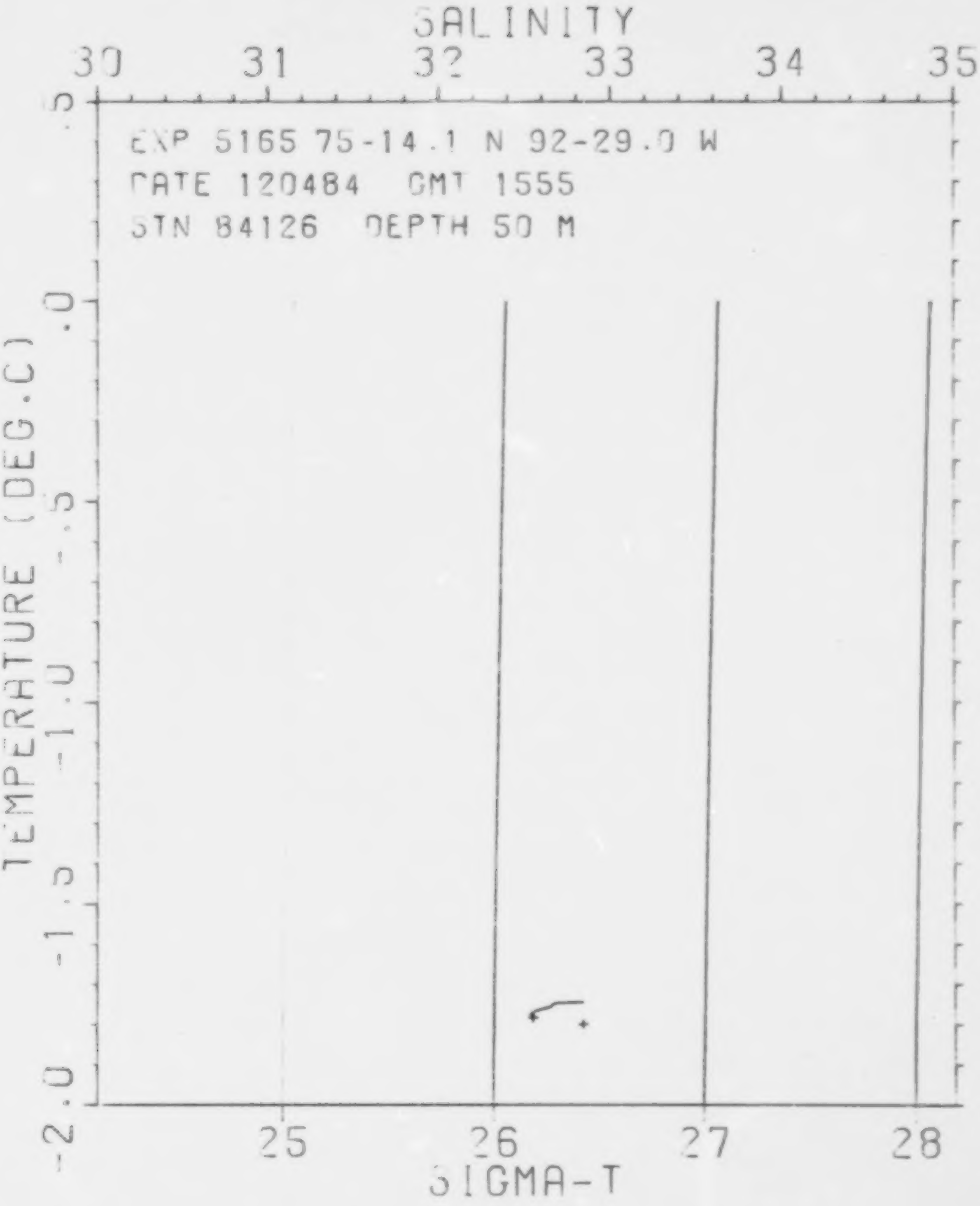
SIGMA-T


SALINITY
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EXP 5165 75-14.1 N 92-29.0 W
DATE 120484 GMT 1555
STN 84126 DEPTH 50 M
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-1.0
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-2.0
TEMPERATURE (DEG.C)
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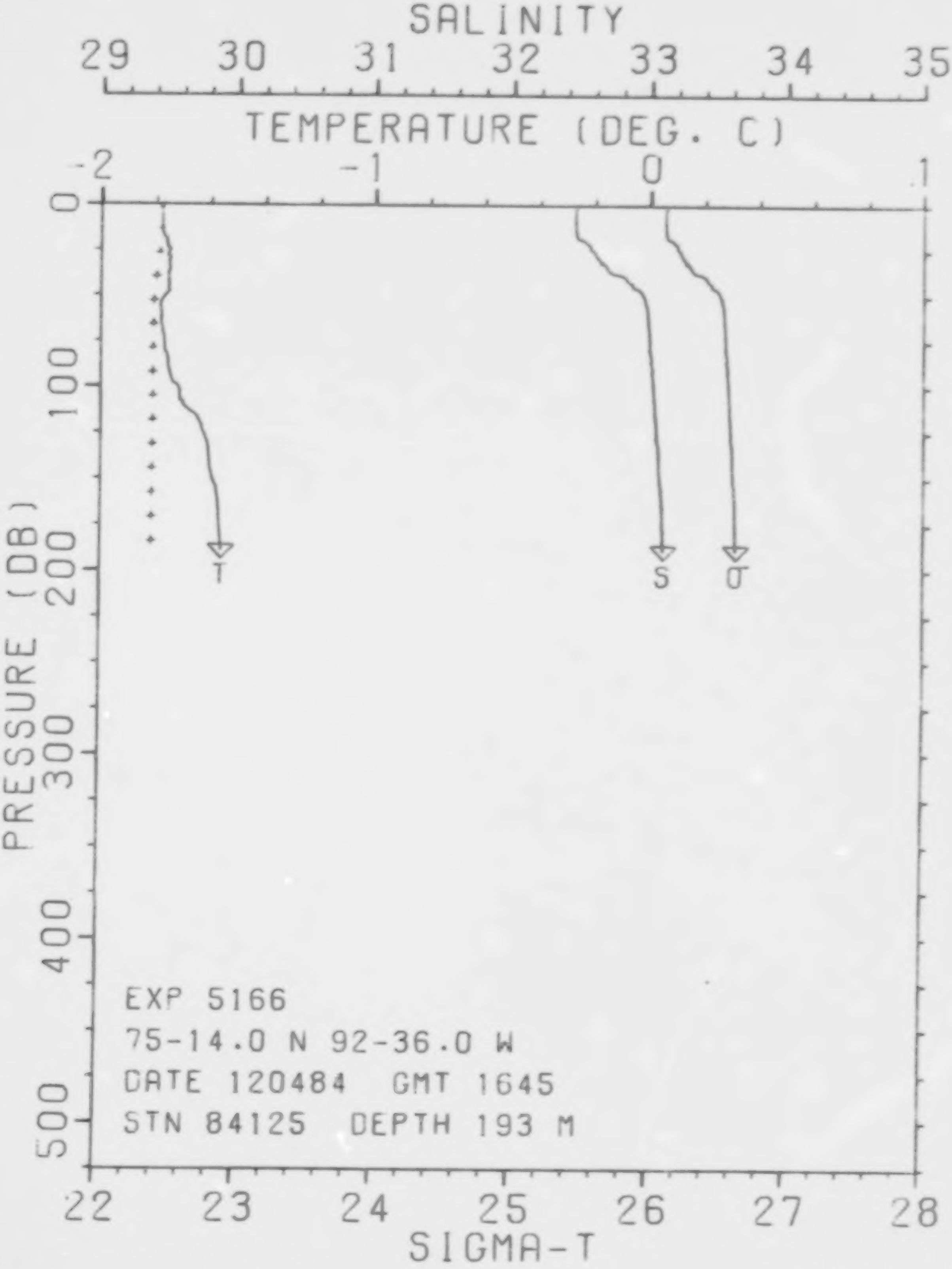
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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0
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PRESSURE (DB)
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100
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EXP 5166
75-14.0 N 92-36.0 W
DATE 120484 GMT 1645
STN 84125 DEPTH 193 M
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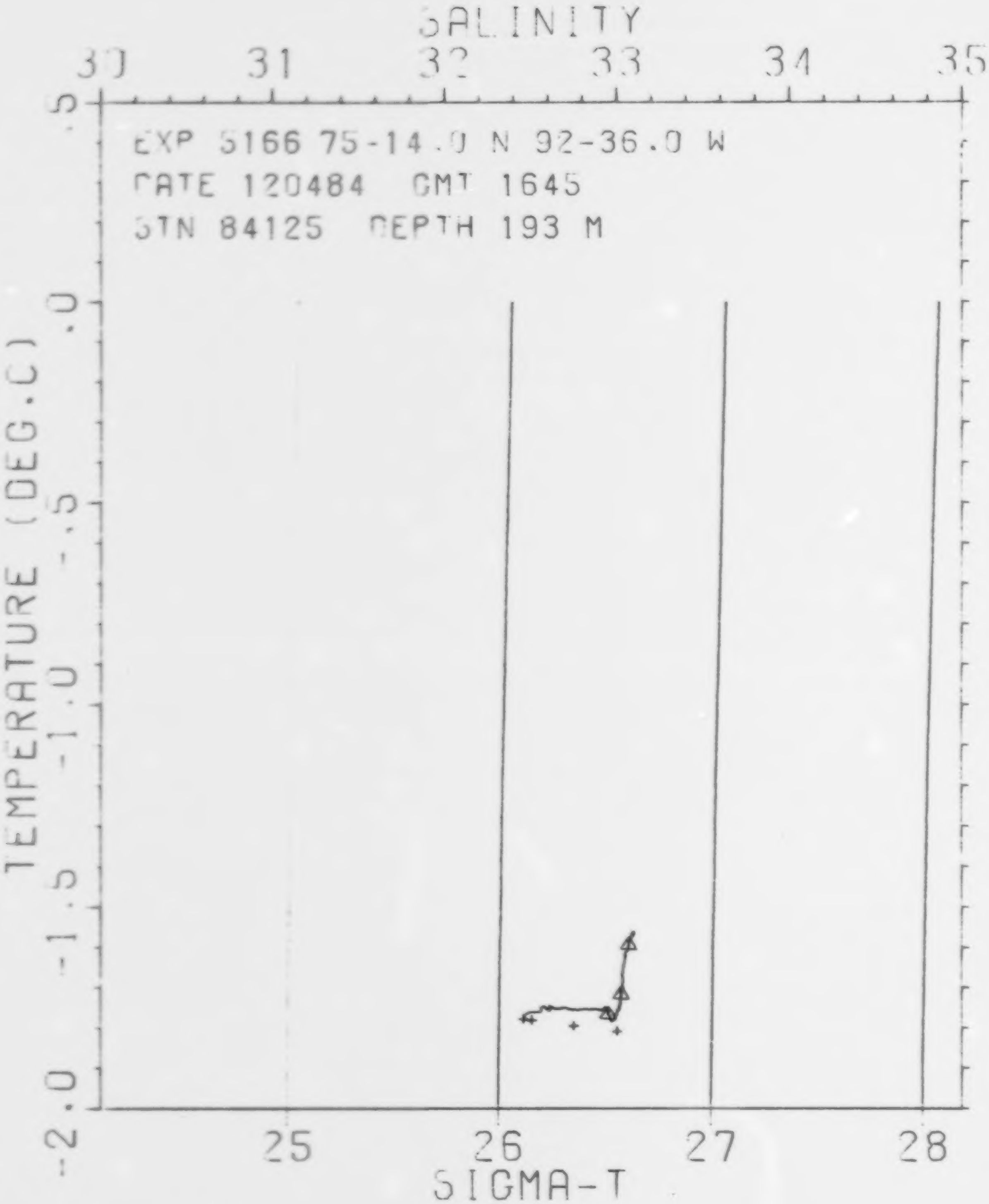
SIGMA-T


SALINITY
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EXP 5166 75-14.0 N 92-36.0 W
DATE 120484 GMT 1645
STN 84125 DEPTH 193 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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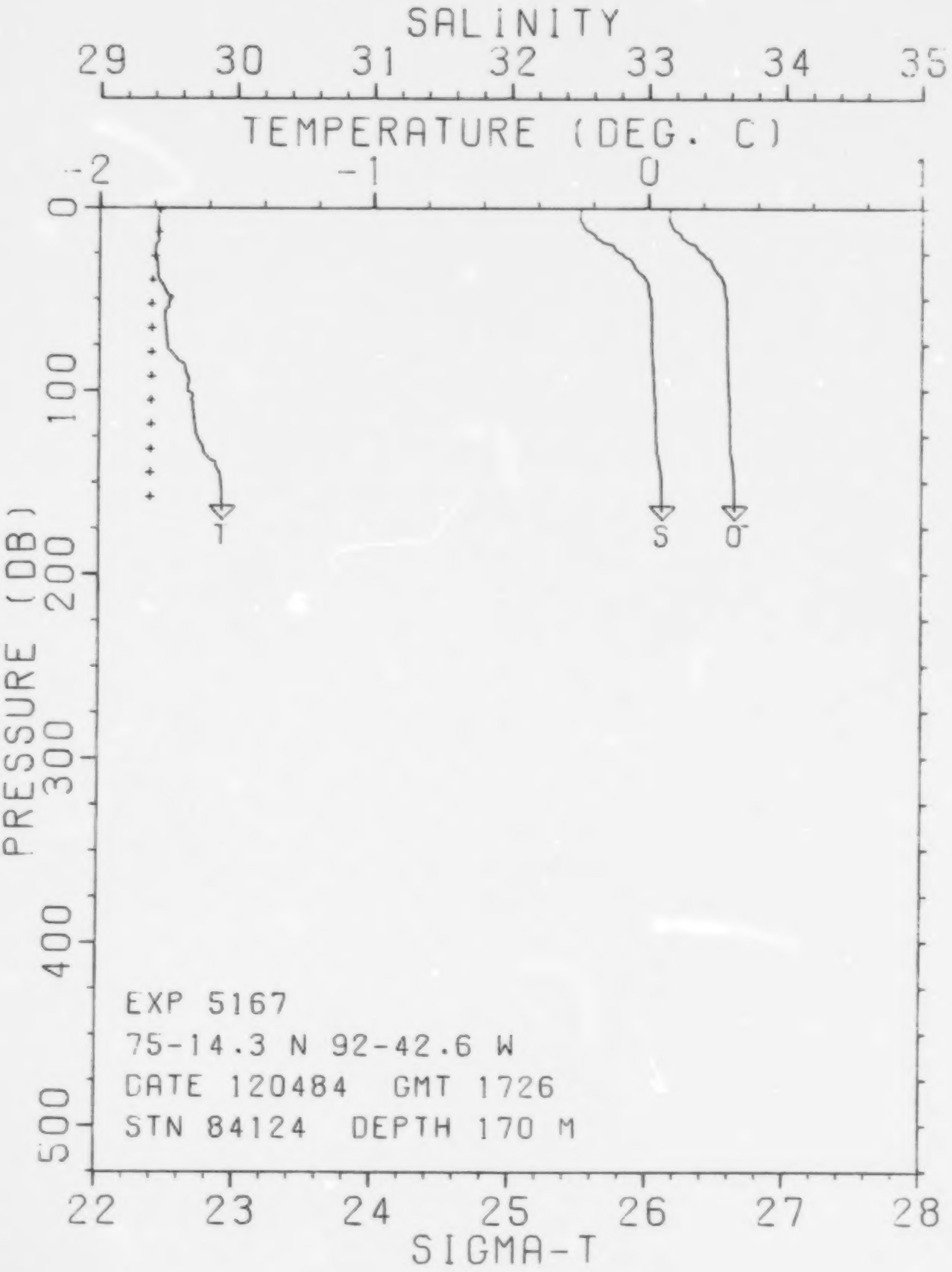
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
-2
-1
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1
PRESSURE (DB)
0
100
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EXP 5167
75-14.3 N 92-42.6 W
DATE 120484 GMT 1726
STN 84124 DEPTH 170 M
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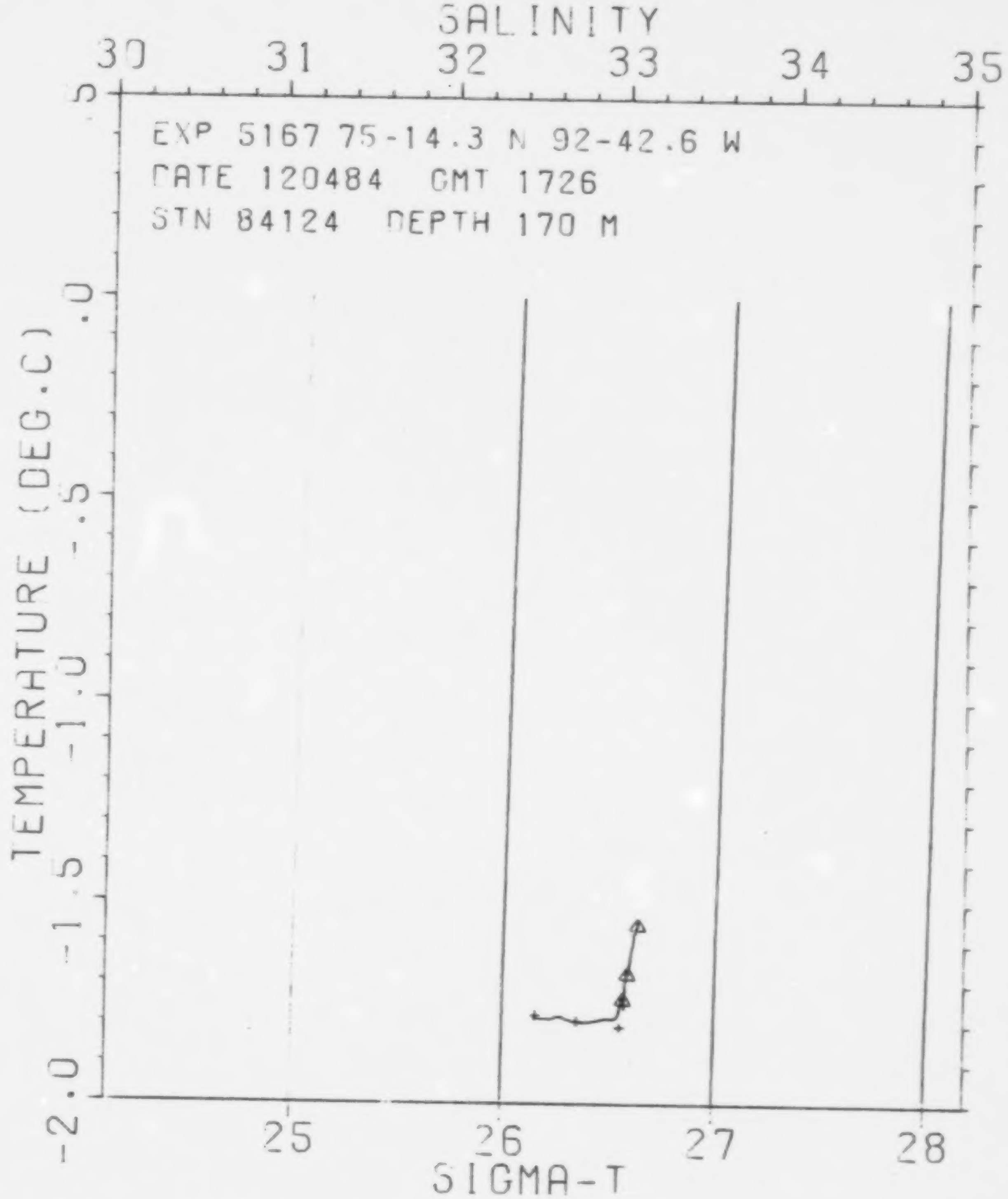
SIGMA-T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DATE 120484 GMT 1726
STN 84124 DEPTH 170 M
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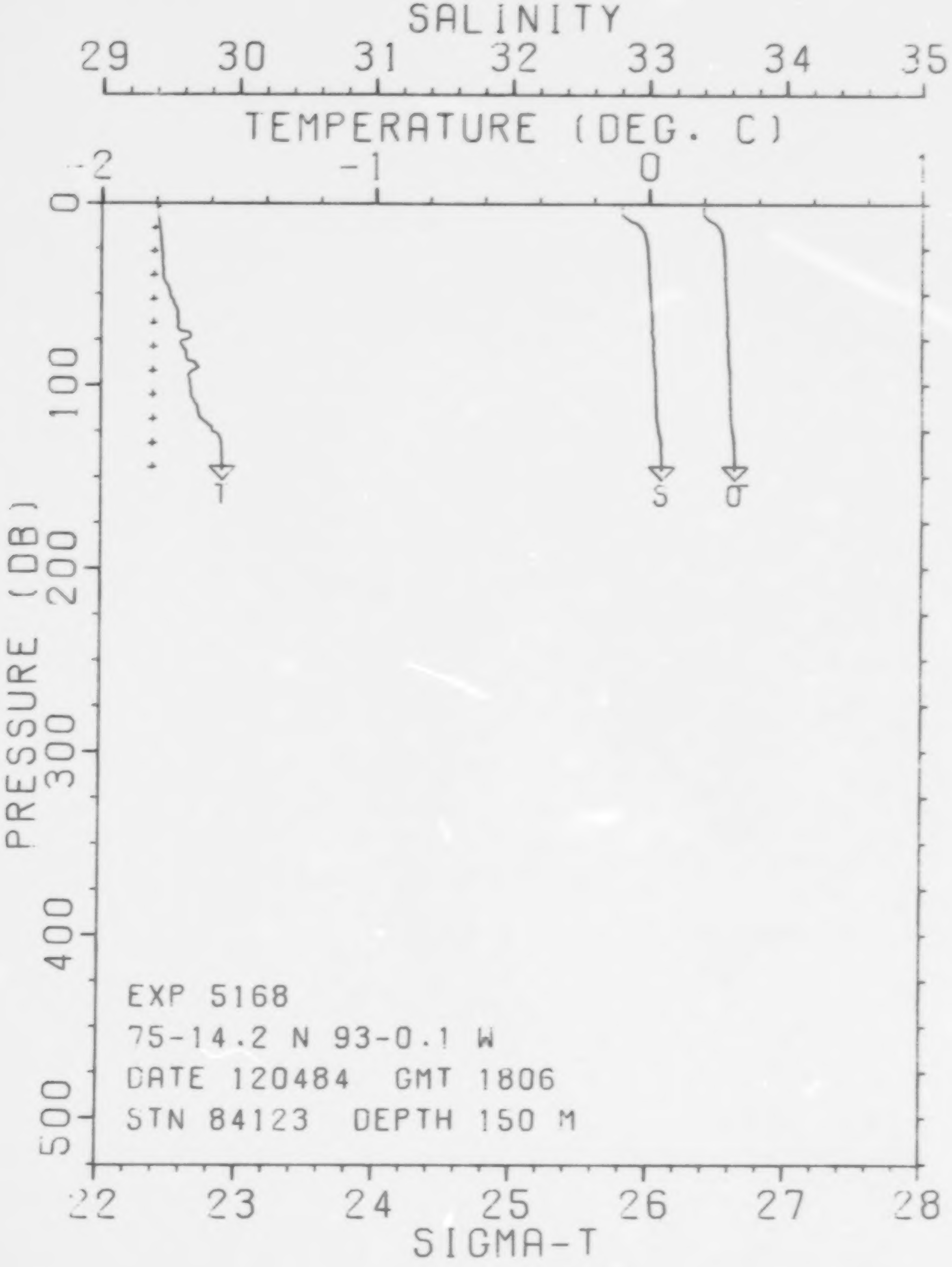
SIGMA-T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PRESSURE (DB)
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EXP 5168
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DATE 120484 GMT 1806
STN 84123 DEPTH 150 M
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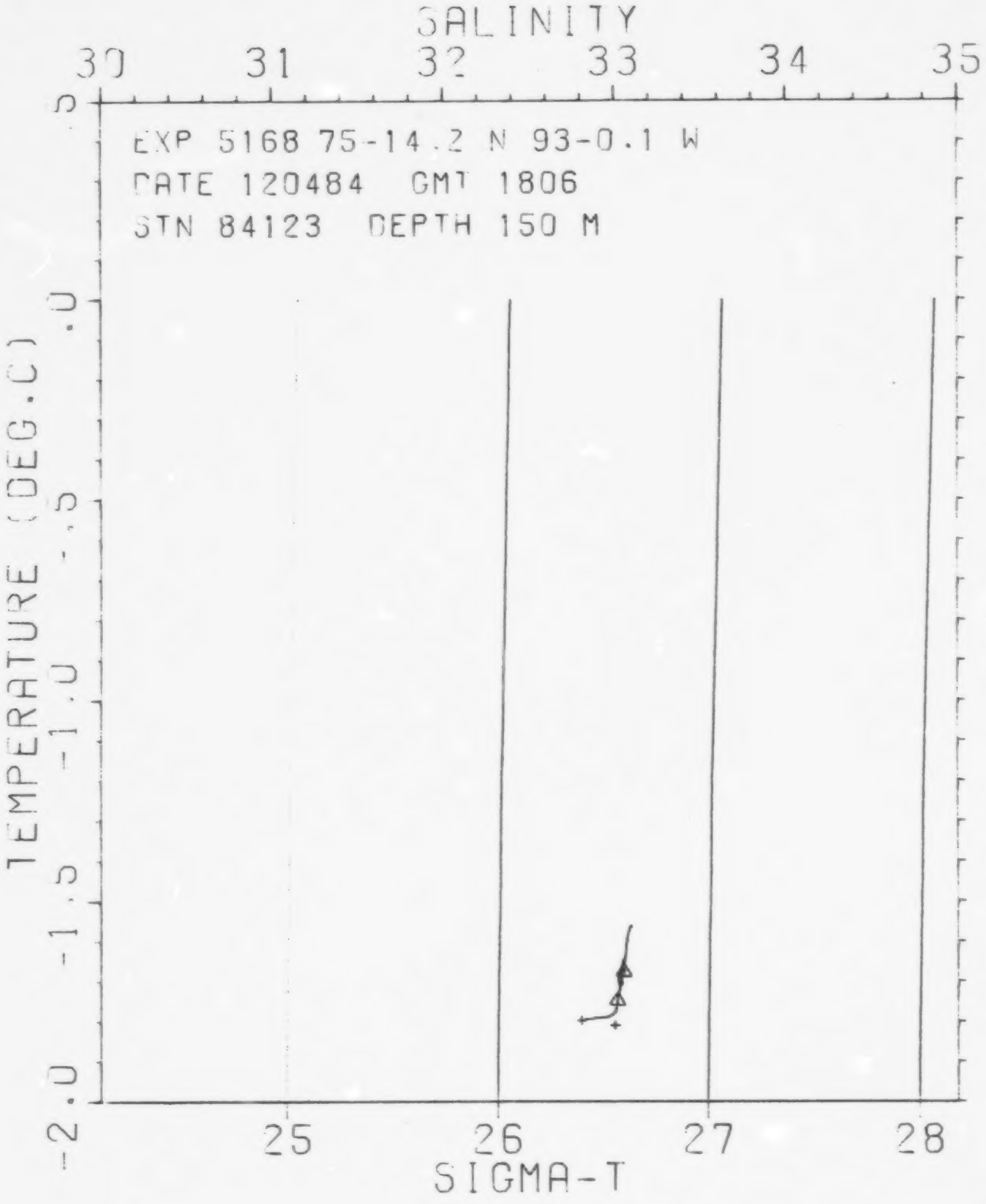
SIGMA-T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DATE 120484 GMT 1806
STN 84123 DEPTH 150 M
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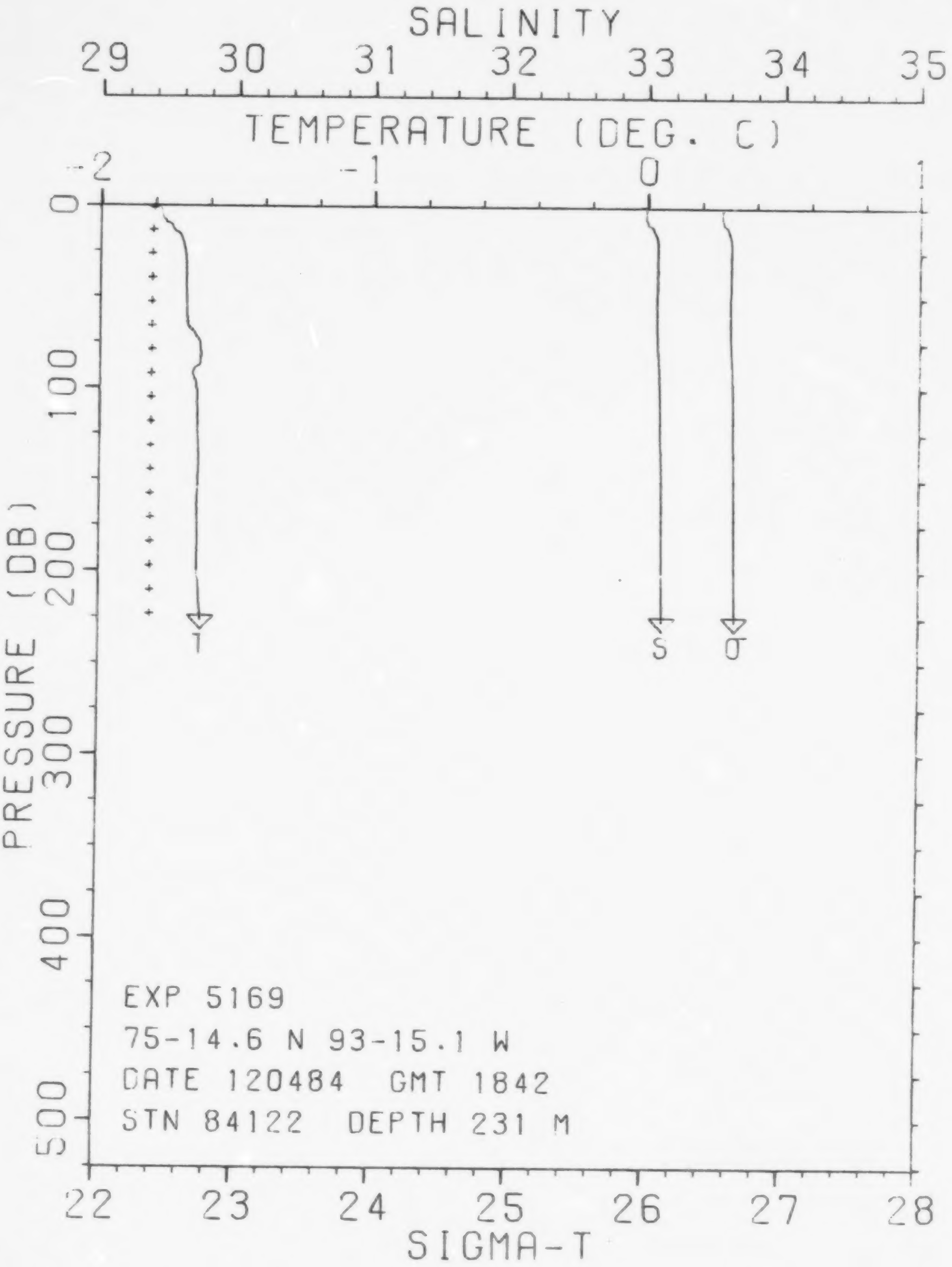
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PRESSURE (DB)
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EXP 5169
75-14.6 N 93-15.1 W
DATE 120484 GMT 1842
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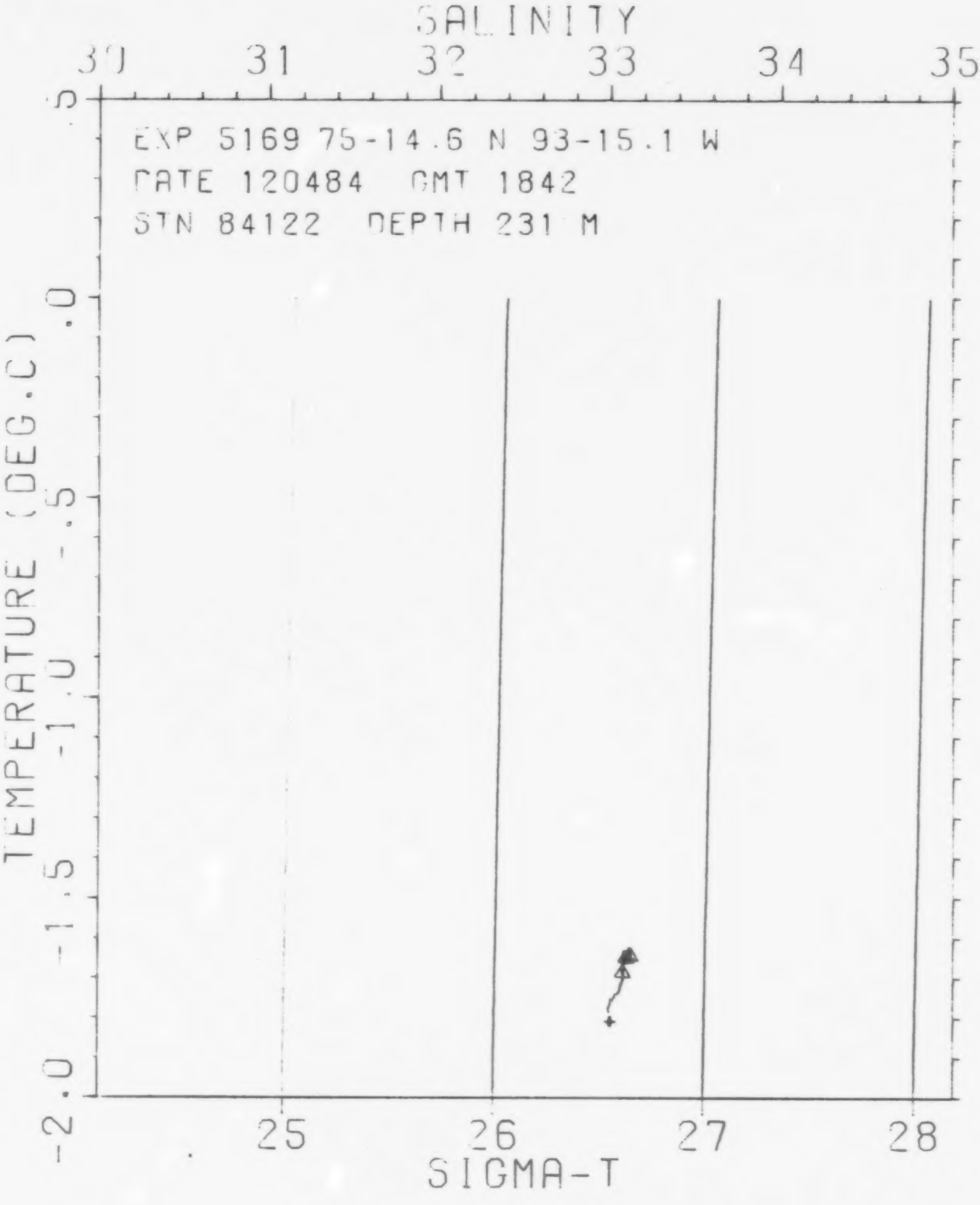
SIGMA-T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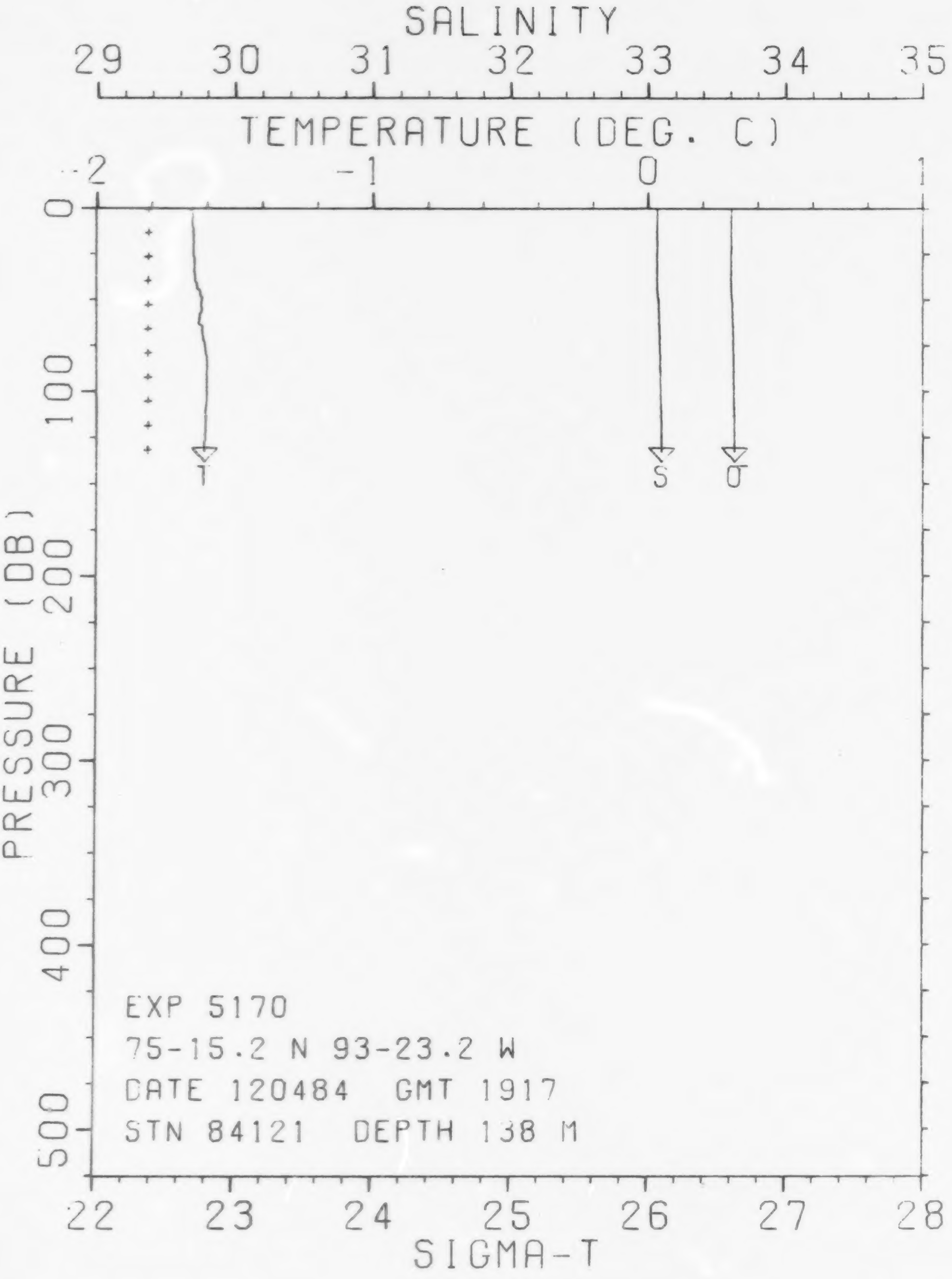
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PRESSURE (DB)
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EXP 5170
75-15.2 N 93-23.2 W
DATE 120484 GMT 1917
STN 84121 DEPTH 138 M
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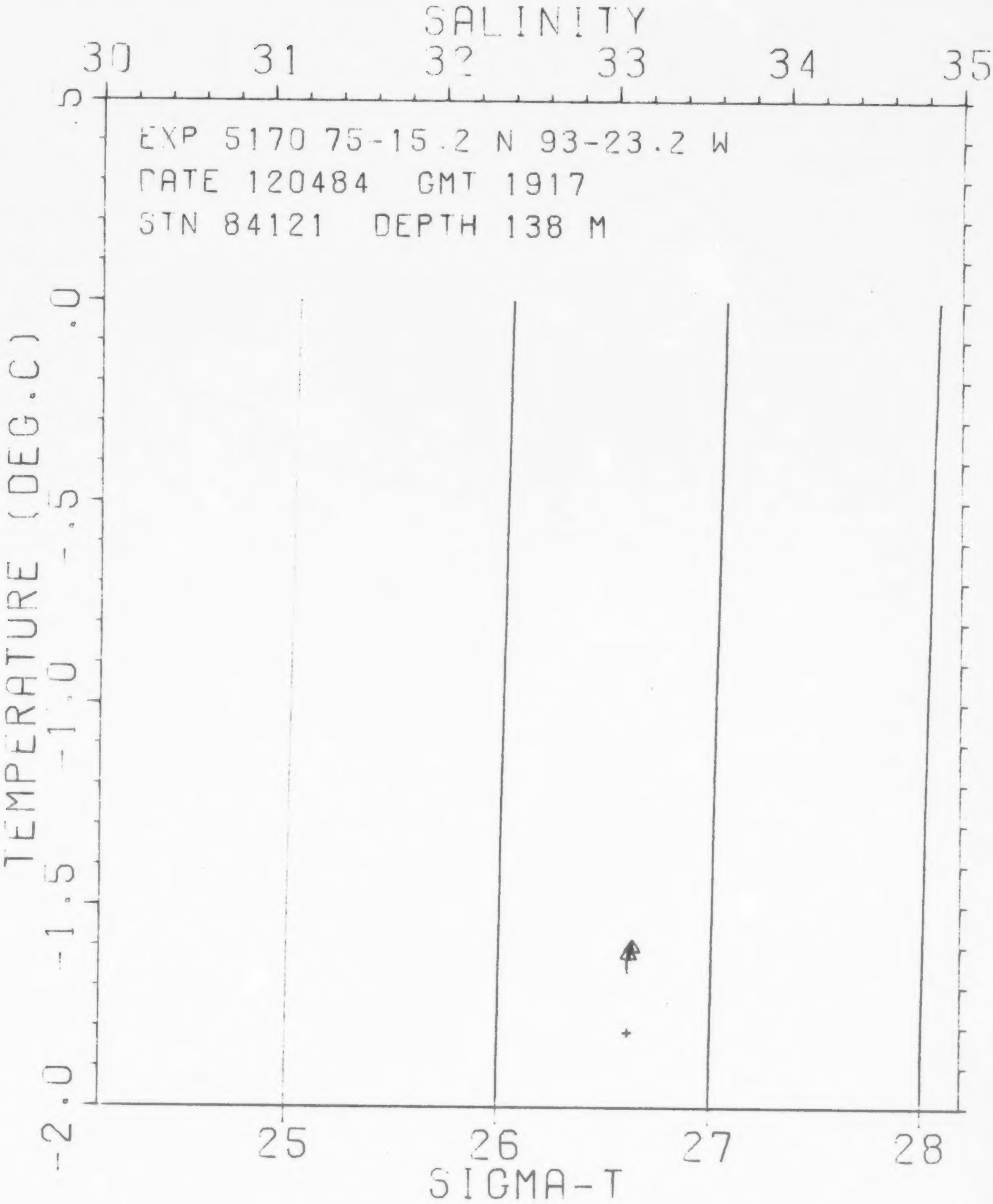
SIGMA-T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STN 84121 DEPTH 138 M
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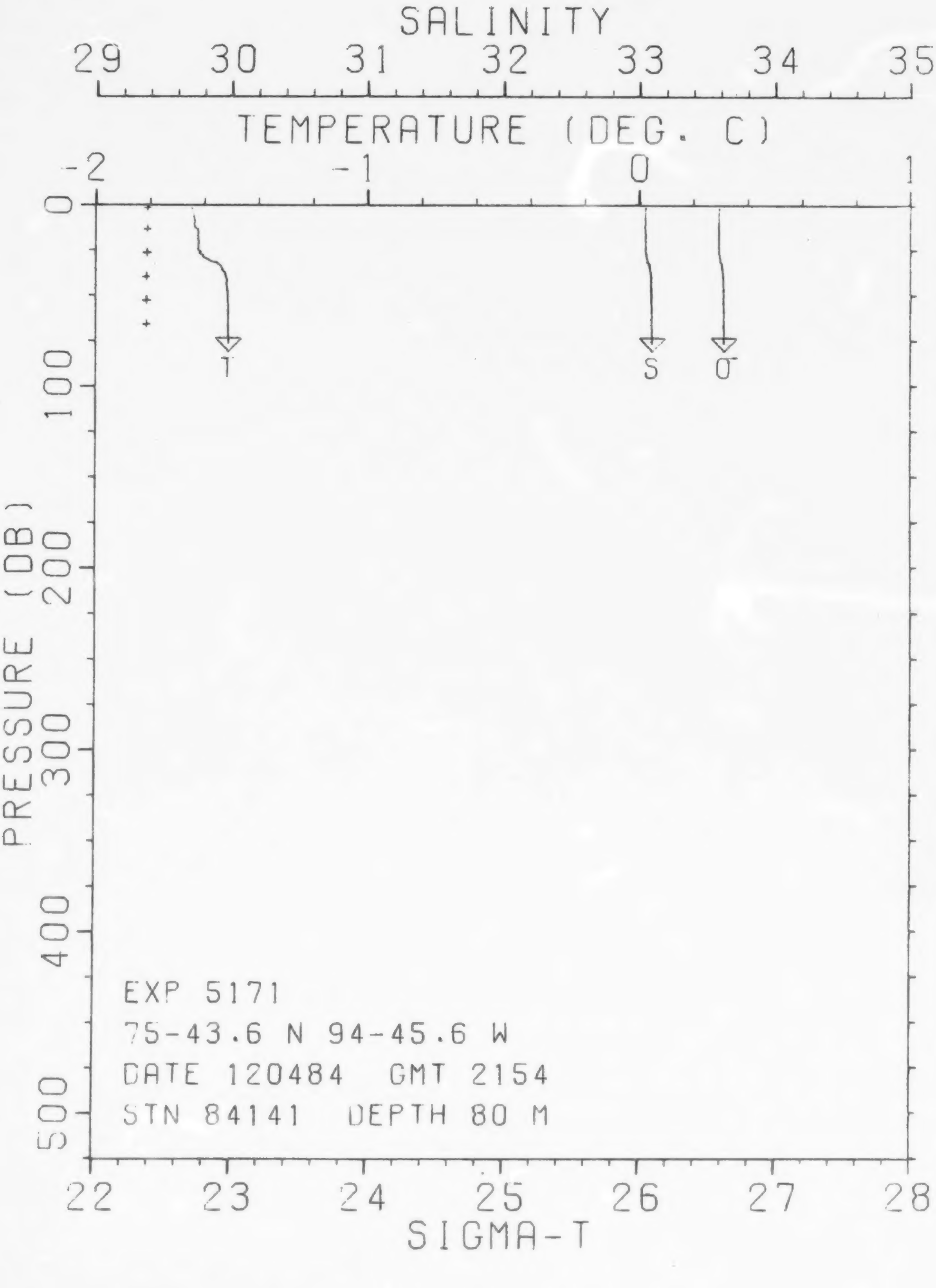
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PRESSURE (DB)
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EXP 5171
75-43.6 N 94-45.6 W
DATE 120484 GMT 2154
STN 84141 DEPTH 80 M
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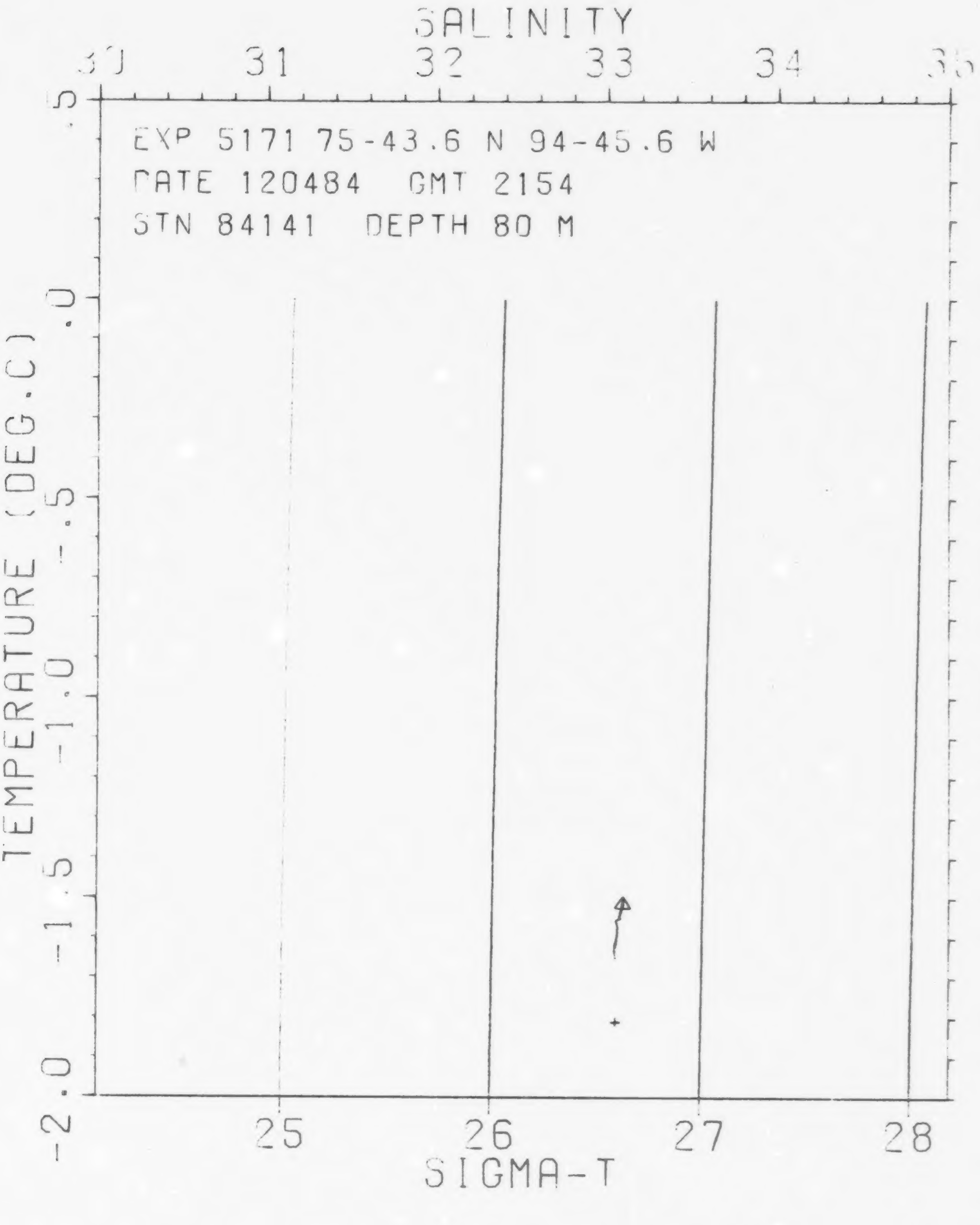
SIGMA-T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DATE 120484 GMT 2154
STN 84141 DEPTH 80 M
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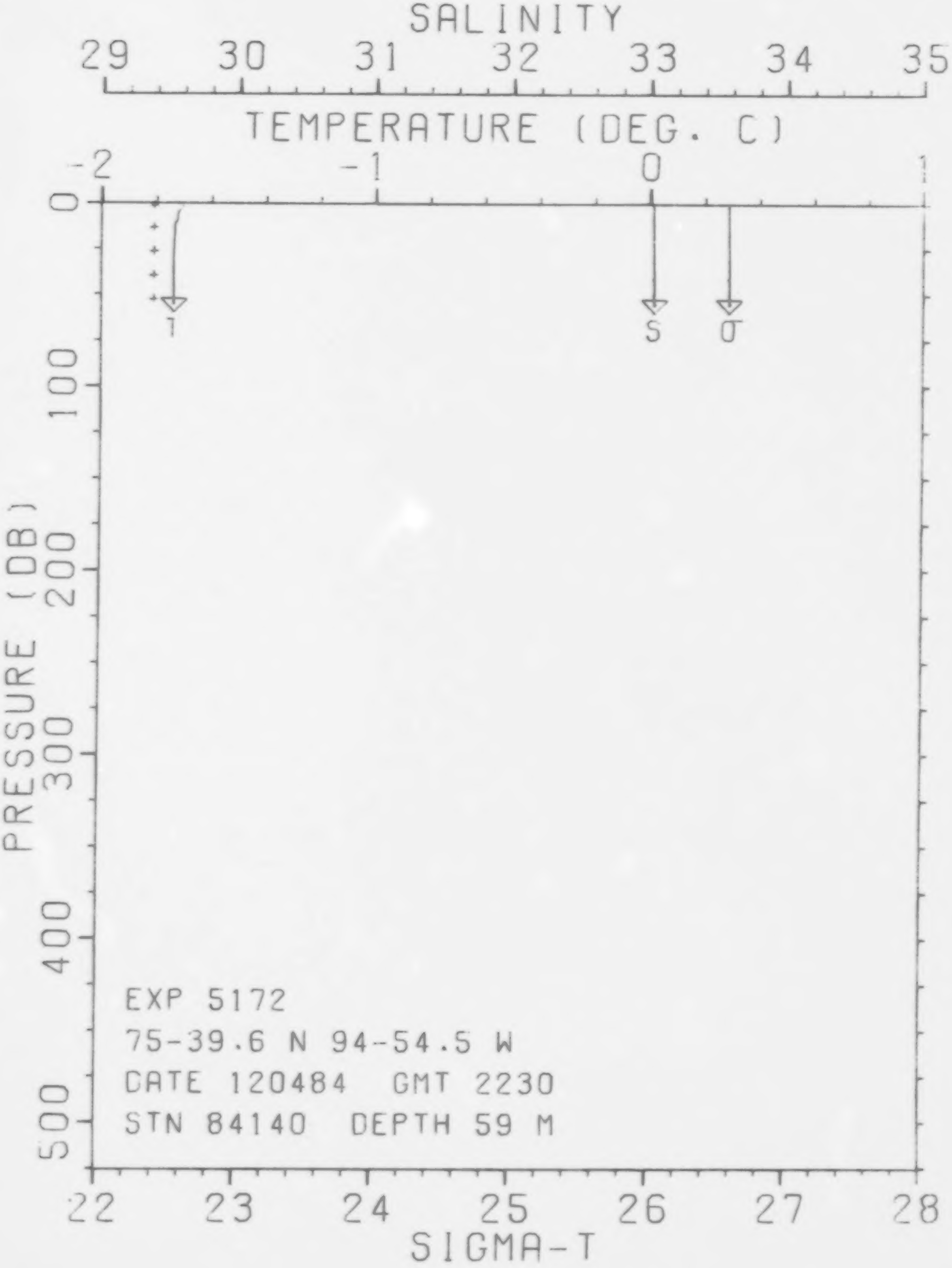
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5172
75-39.6 N 94-54.5 W
DATE 120484 GMT 2230
STN 84140 DEPTH 59 M
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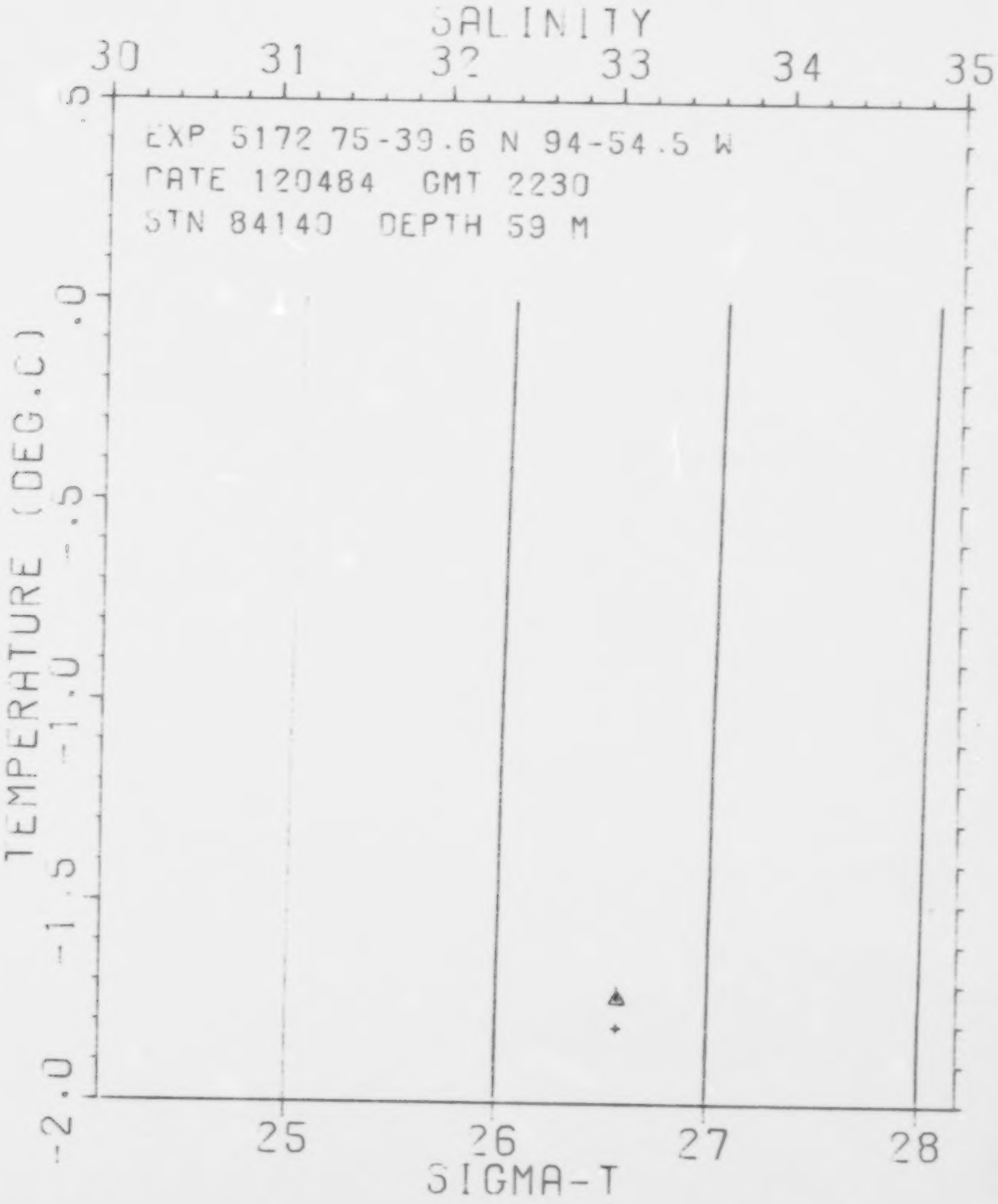
SIGMA-T


SALINITY
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EXP 5172 75-39.6 N 94-54.5 W
DATE 120484 GMT 2230
STN 84140 DEPTH 59 M
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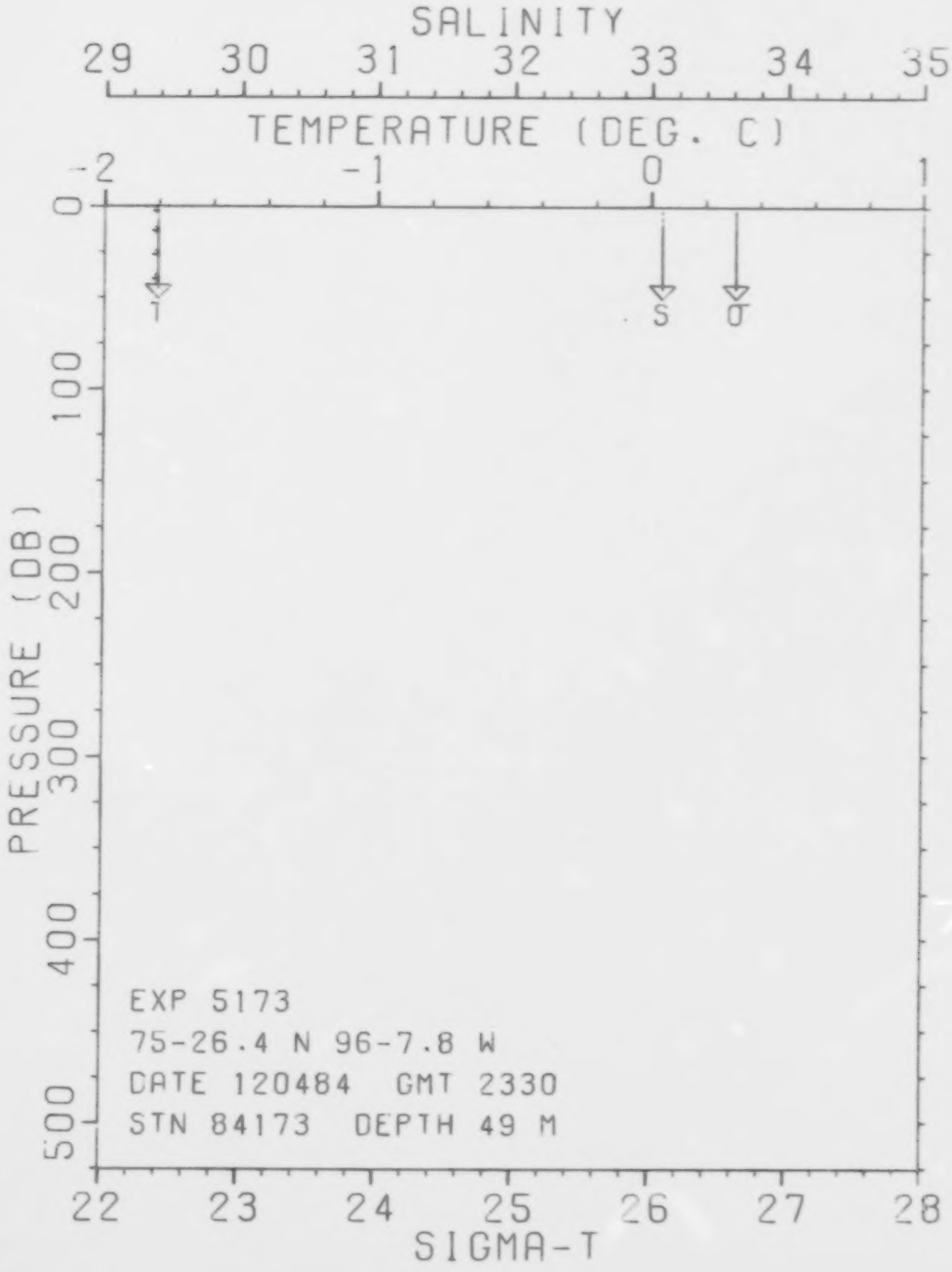
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5173
75-26.4 N 96-7.8 W
DATE 120484 GMT 2330
STN 84173 DEPTH 49 M
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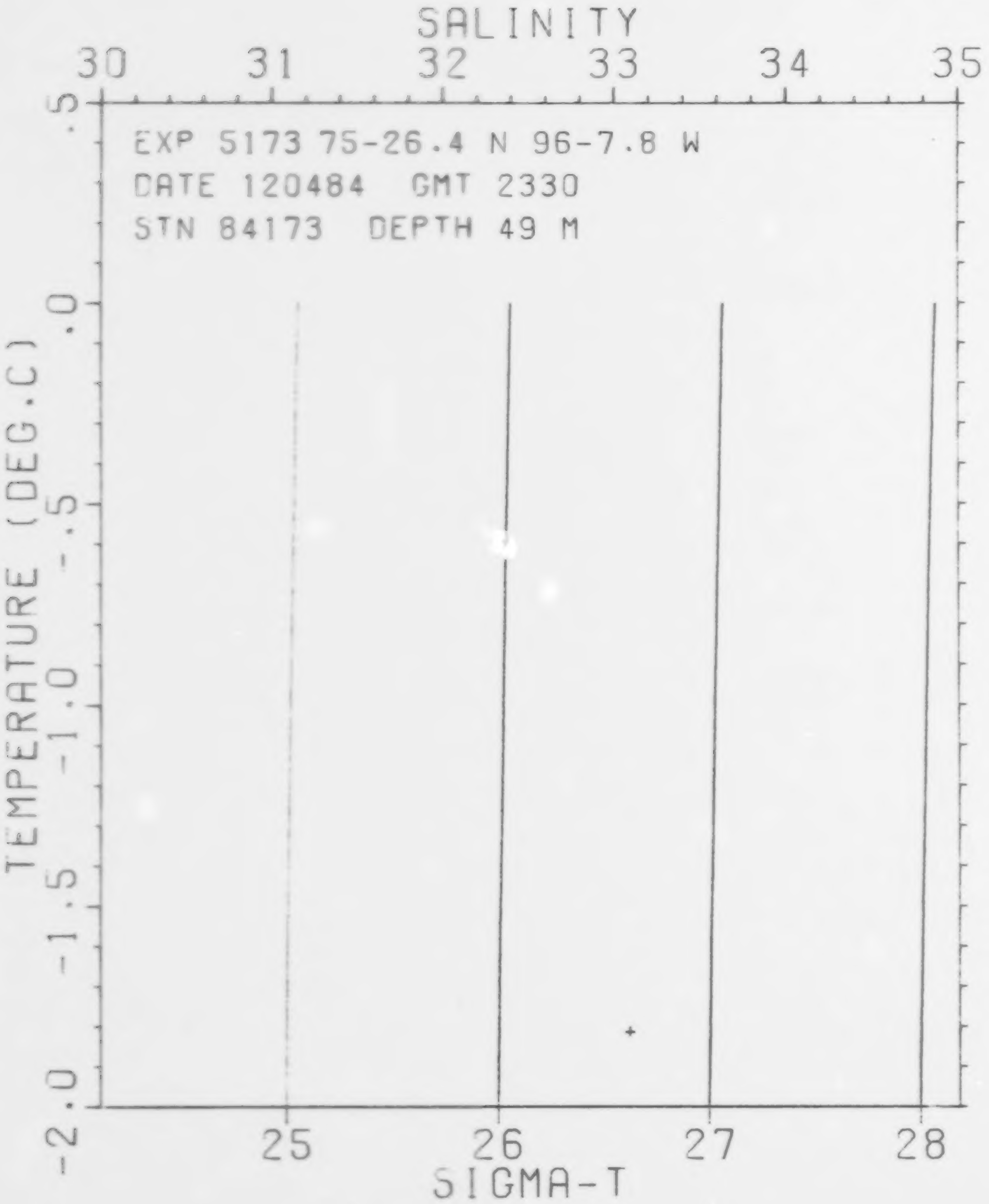
SIGMA-T


SALINITY
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EXP 5173 75-26.4 N 96-7.8 W
DATE 120484 GMT 2330
STN 84173 DEPTH 49 M
TEMPERATURE (DEG.C)
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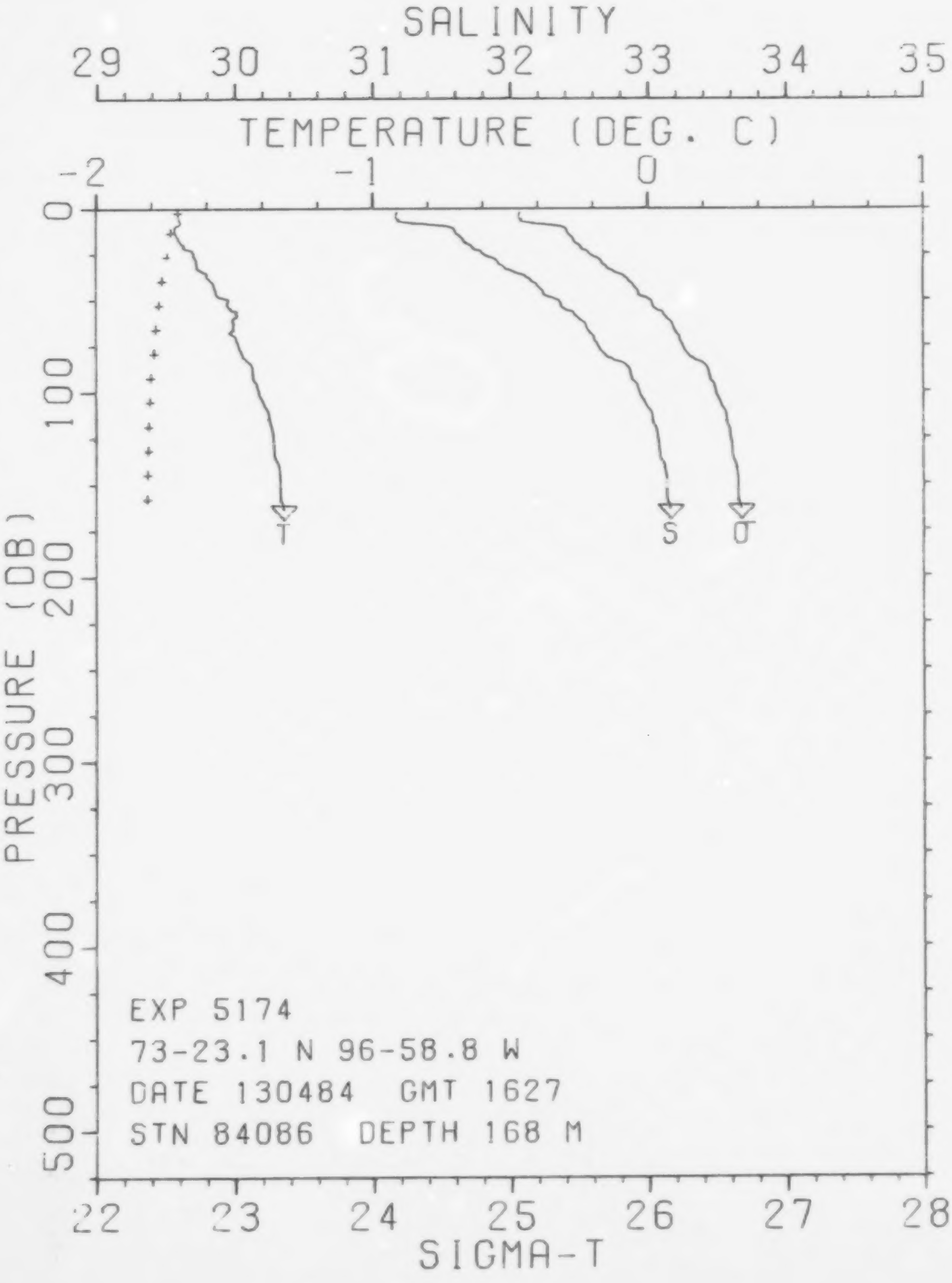
SIGMA-T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TEMPERATURE (DEG. C)
-2
-1
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PRESSURE (DB)
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EXP 5174
73-23.1 N 96-58.8 W
DATE 130484 GMT 1627
STN 84086 DEPTH 168 M
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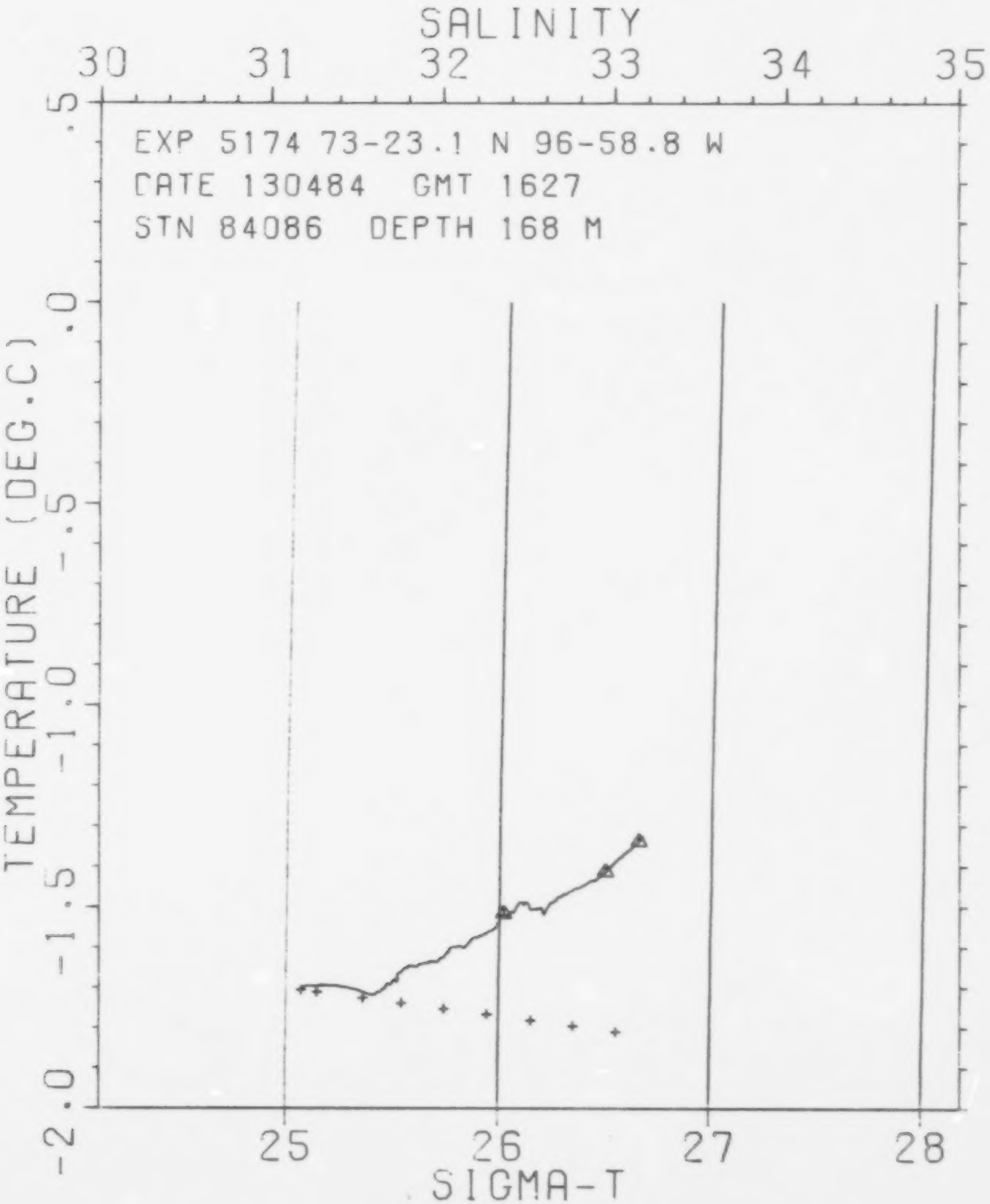
SIGMA-T


SALINITY
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-1.5
-2.0
TEMPERATURE (DEG.C)
EXP 5174 73-23.1 N 96-58.8 W
DATE 130484 GMT 1627
STN 84086 DEPTH 168 M
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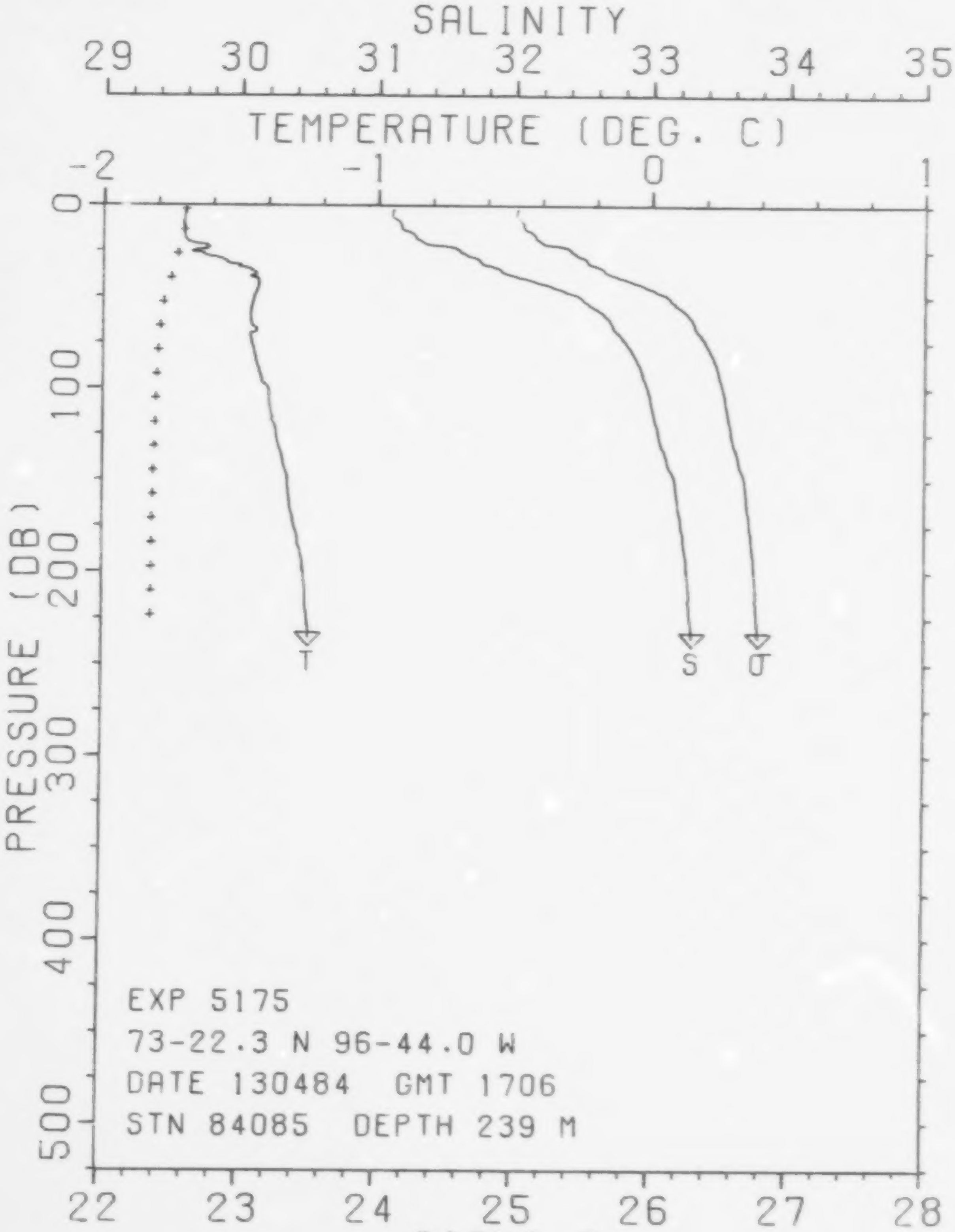
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5175
73-22.3 N 96-44.0 W
DATE 130484 GMT 1706
STN 84085 DEPTH 239 M
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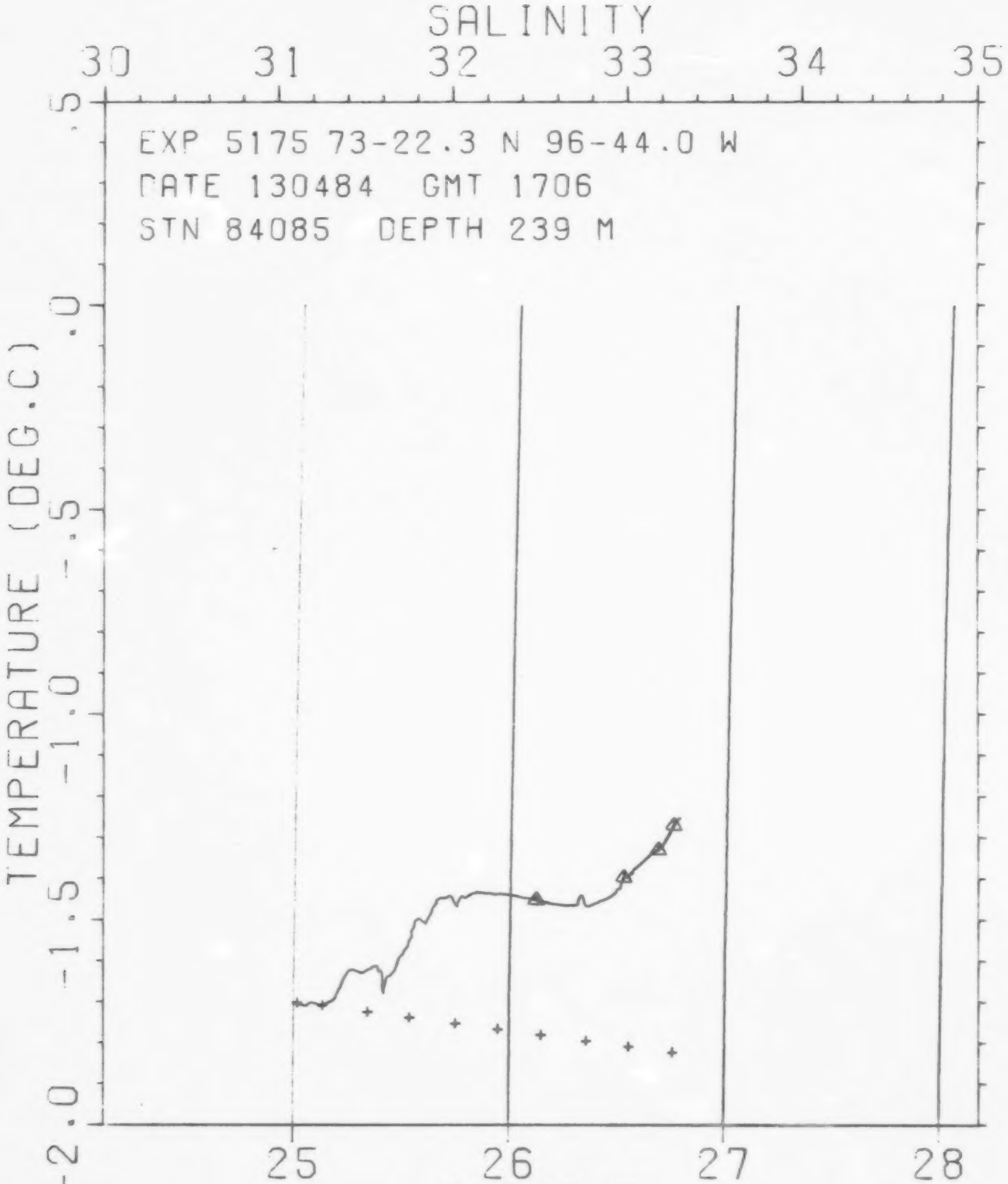
SIGMA-T


SALINITY
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EXP 5175 73-22.3 N 96-44.0 W
DATE 130484 GMT 1706
STN 84085 DEPTH 239 M
TEMPERATURE (DEG.C)
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-2.0
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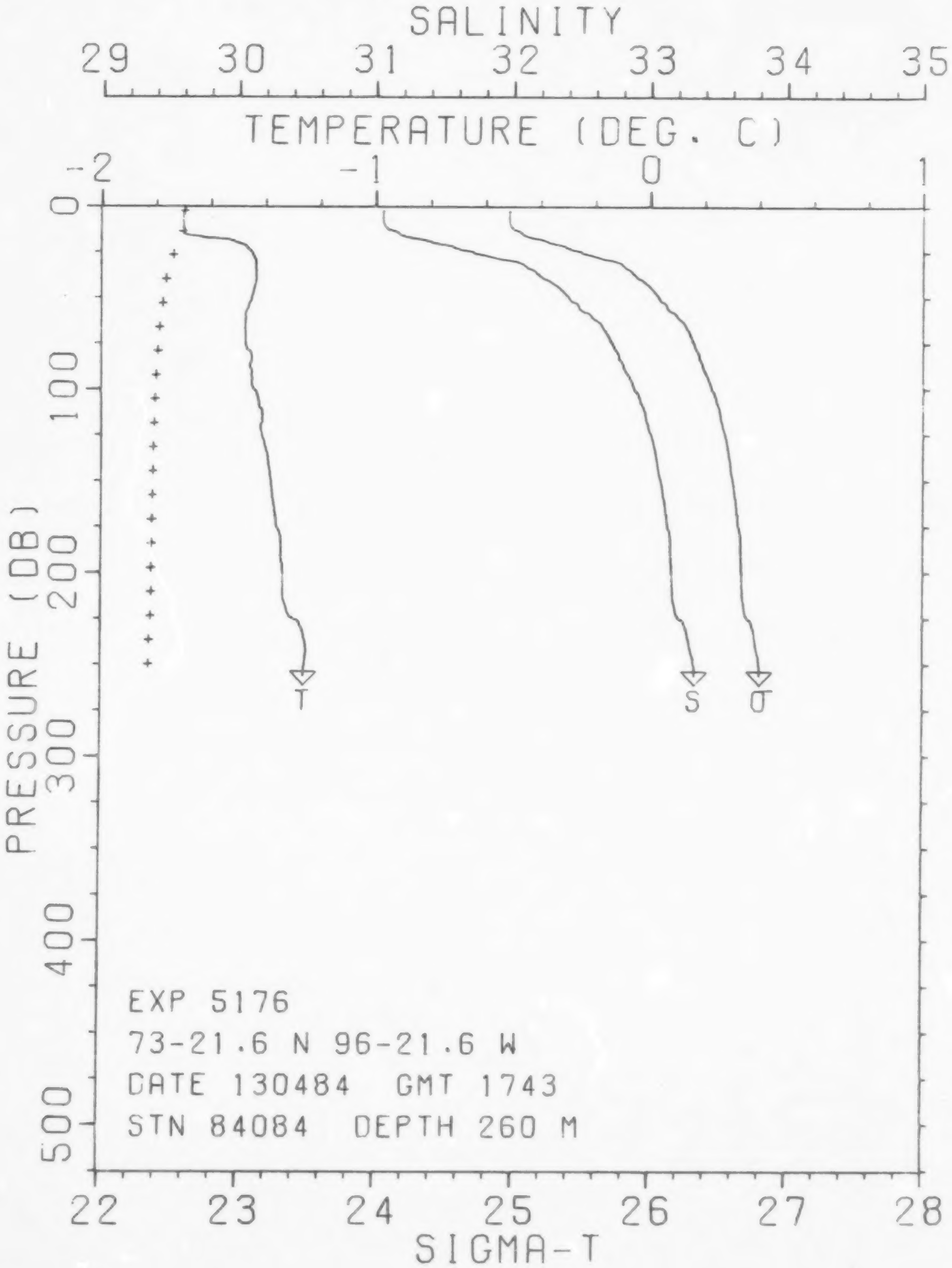
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5176
73-21.6 N 96-21.6 W
DATE 130484 GMT 1743
STN 84084 DEPTH 260 M
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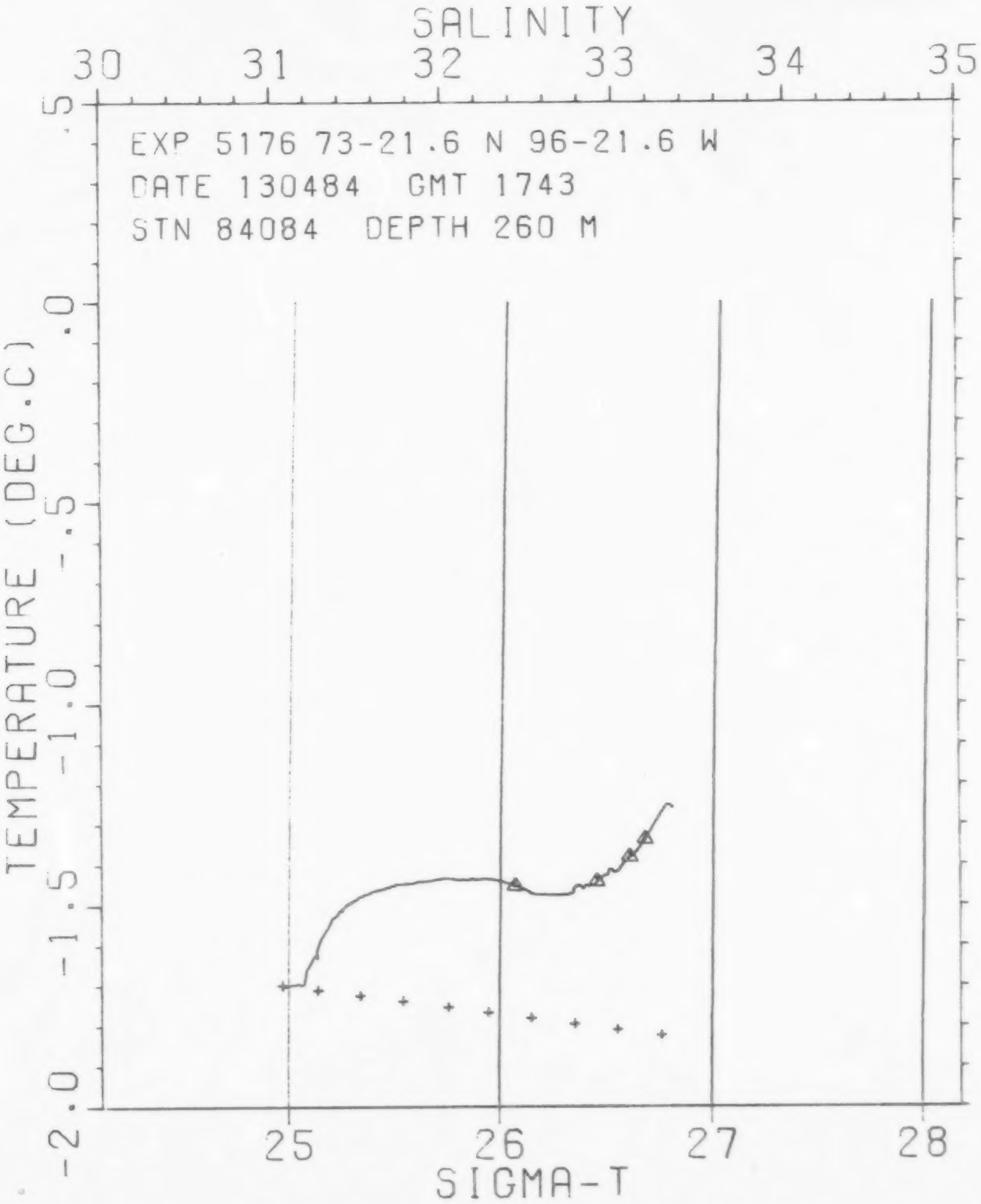
SIGMA-T


SALINITY
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35
EXP 5176 73-21.6 N 96-21.6 W
DATE 130484 GMT 1743
STN 84084 DEPTH 260 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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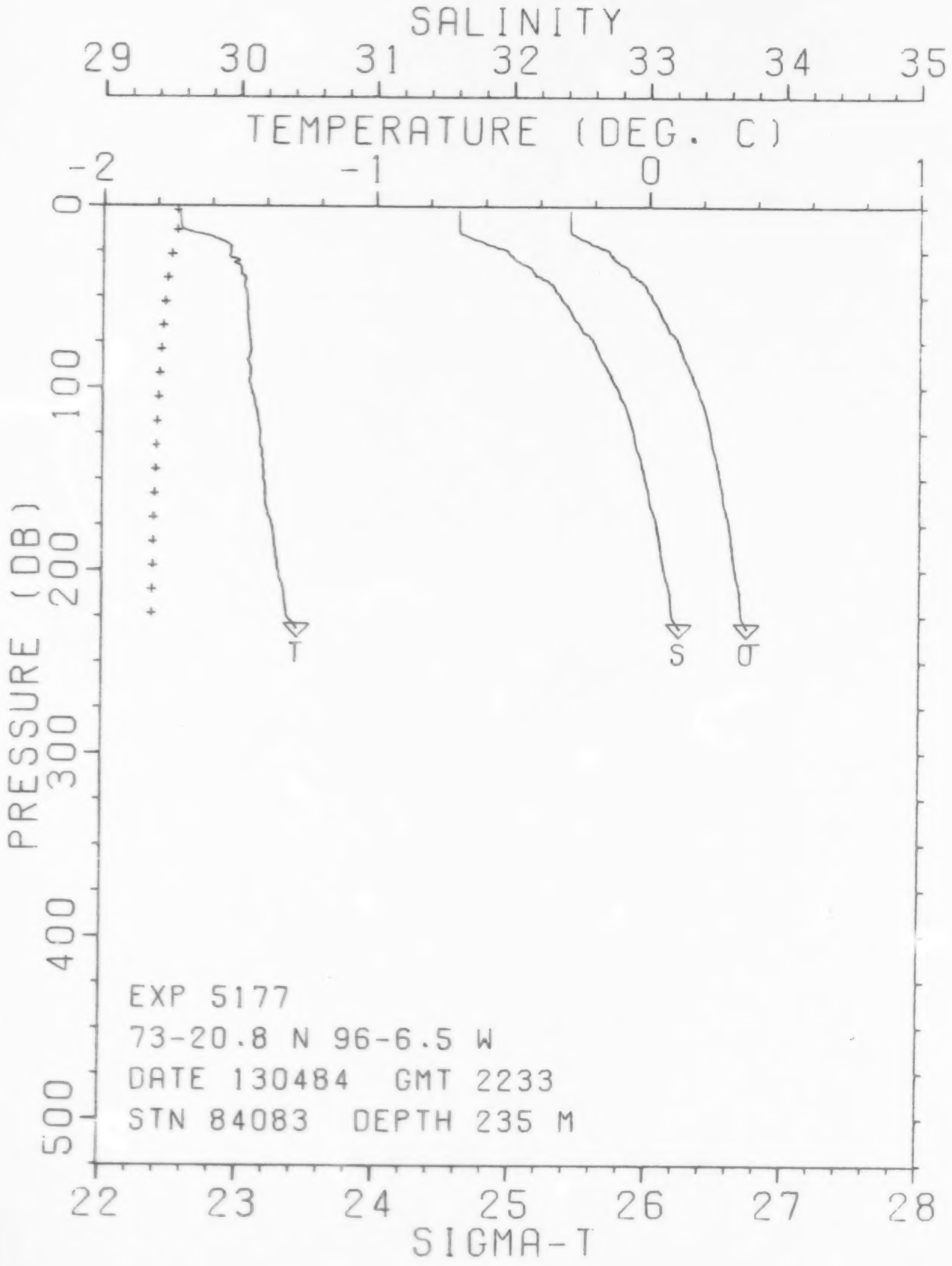
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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-1
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1
PRESSURE (DB)
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EXP 5177
73-20.8 N 96-6.5 W
DATE 130484 GMT 2233
STN 84083 DEPTH 235 M
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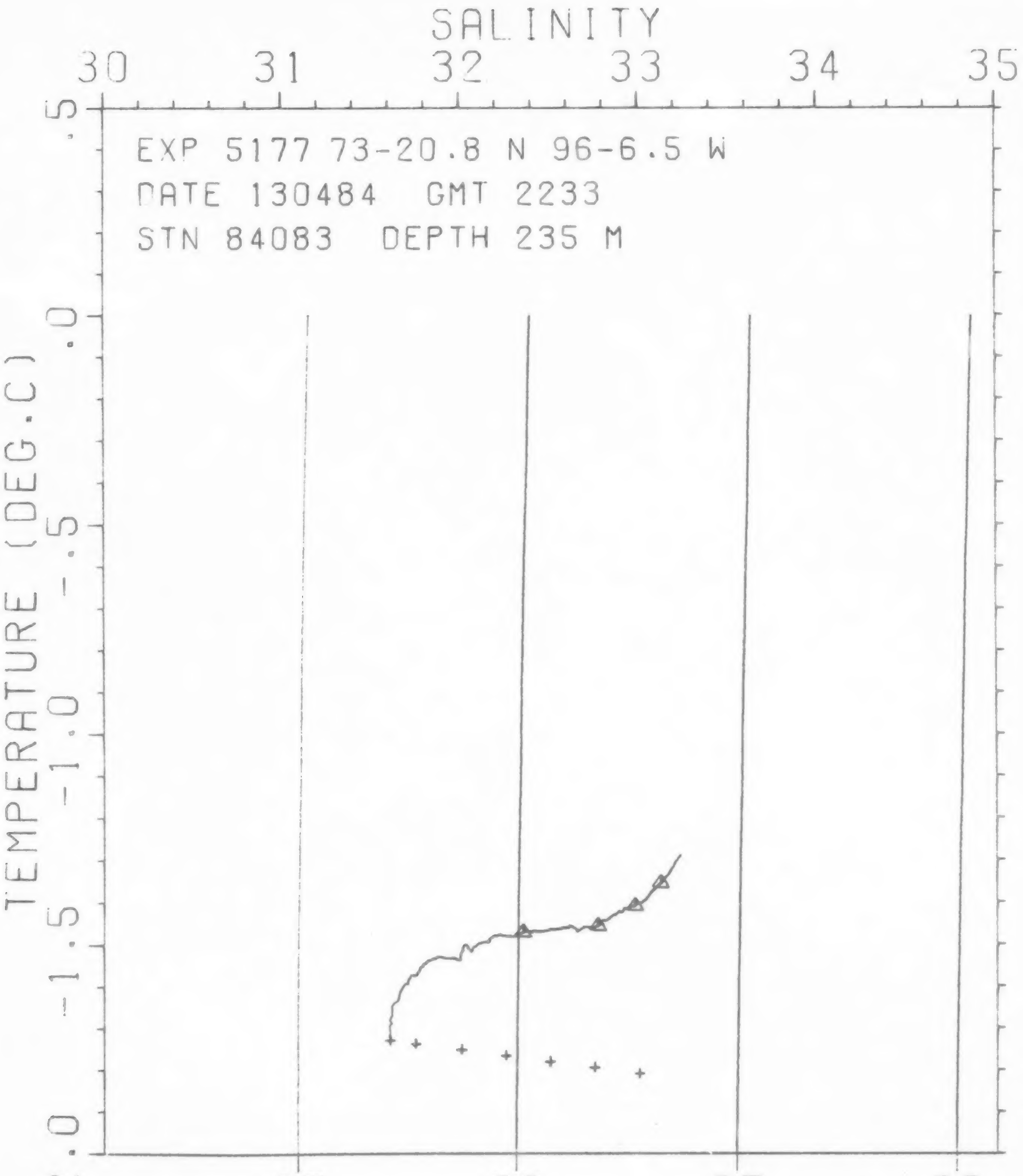
SIGMA-T


SALINITY
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EXP 5177 73-20.8 N 96-6.5 W
DATE 130484 GMT 2233
STN 84083 DEPTH 235 M
TEMPERATURE (DEG.C)
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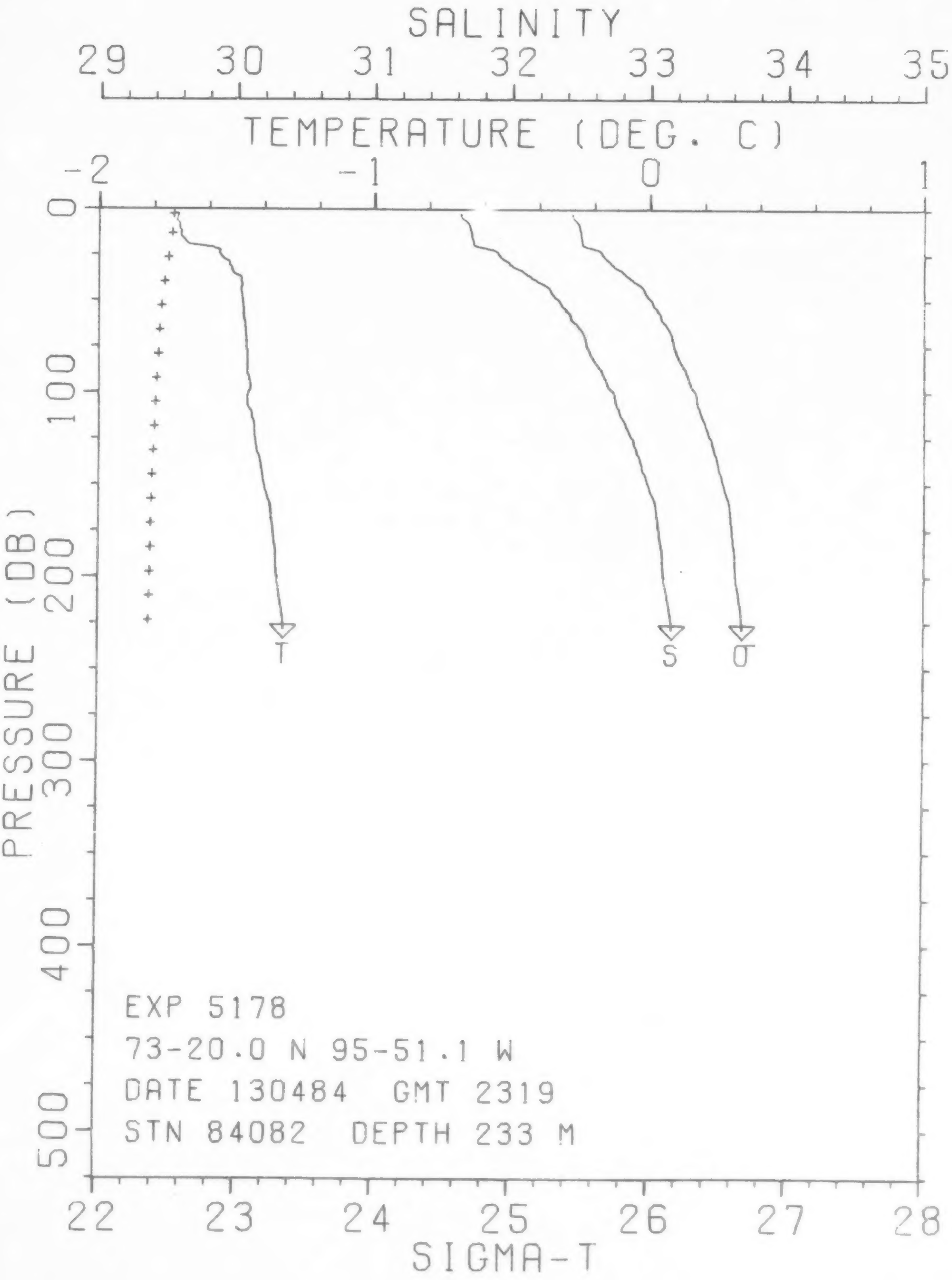
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5178
73-20.0 N 95-51.1 W
DATE 130484 GMT 2319
STN 84082 DEPTH 233 M
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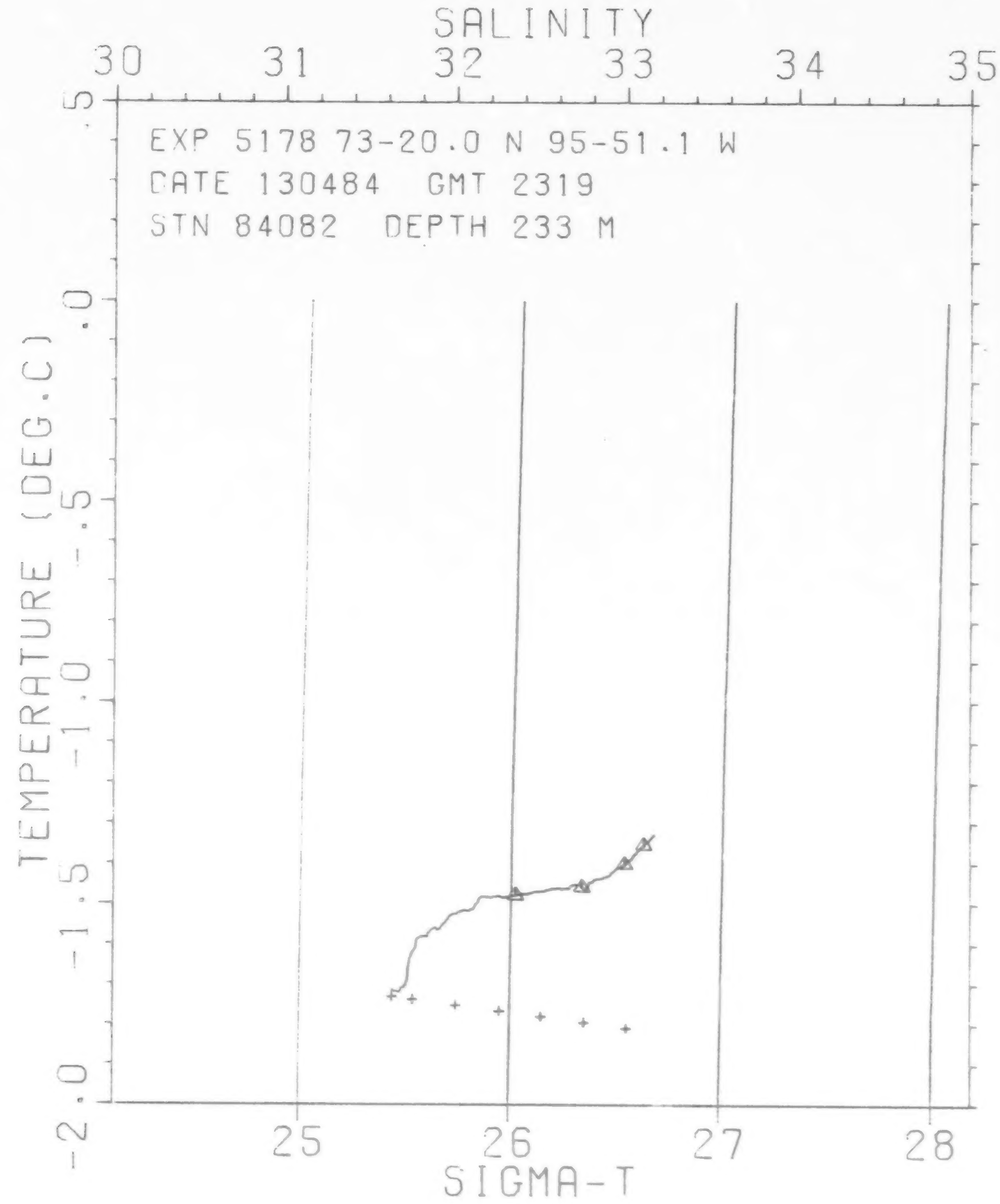
SIGMA-T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-1.0
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-2.0
TEMPERATURE (DEG.C)
EXP 5178 73-20.0 N 95-51.1 W
DATE 130484 GMT 2319
STN 84082 DEPTH 233 M
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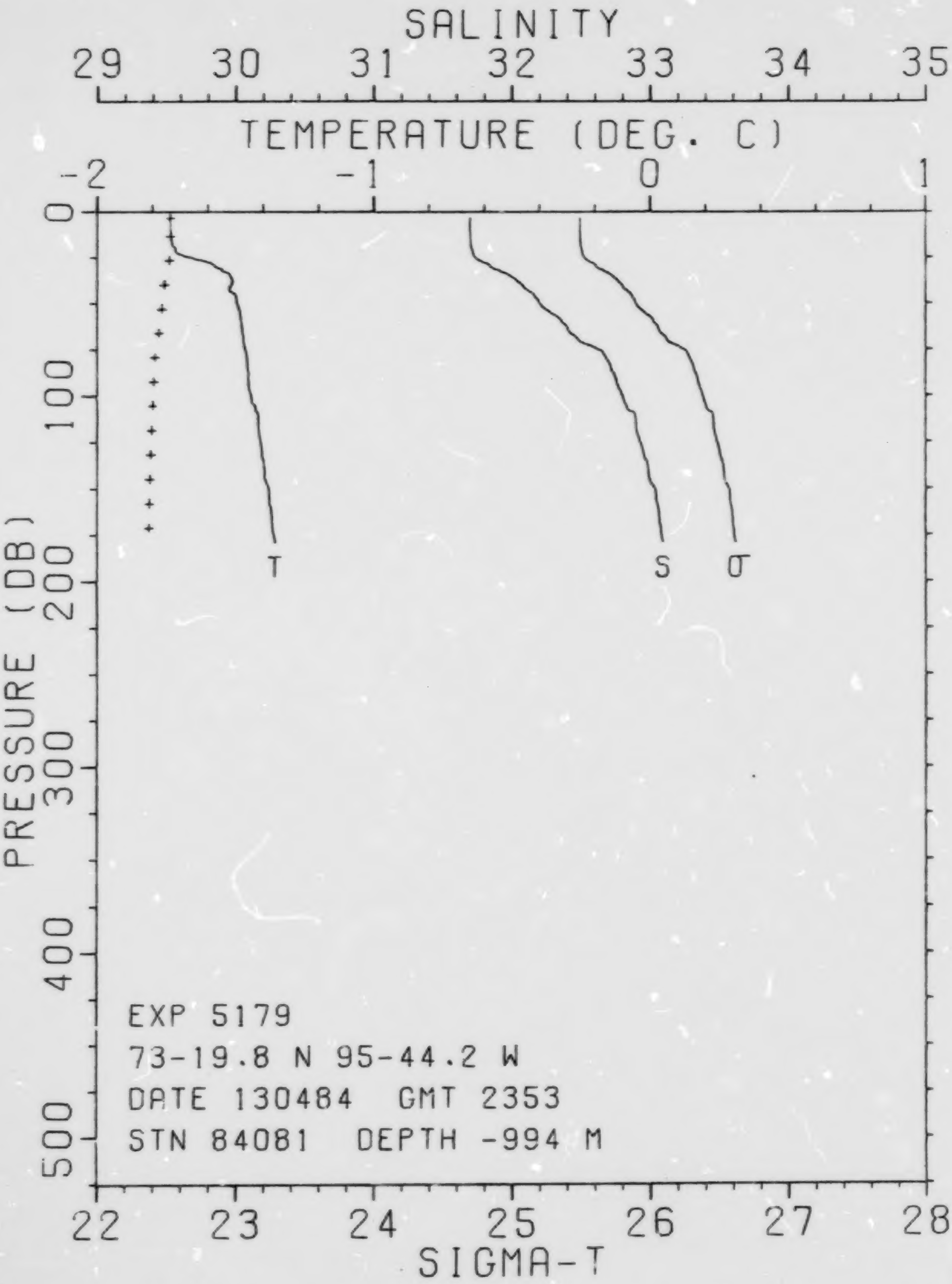
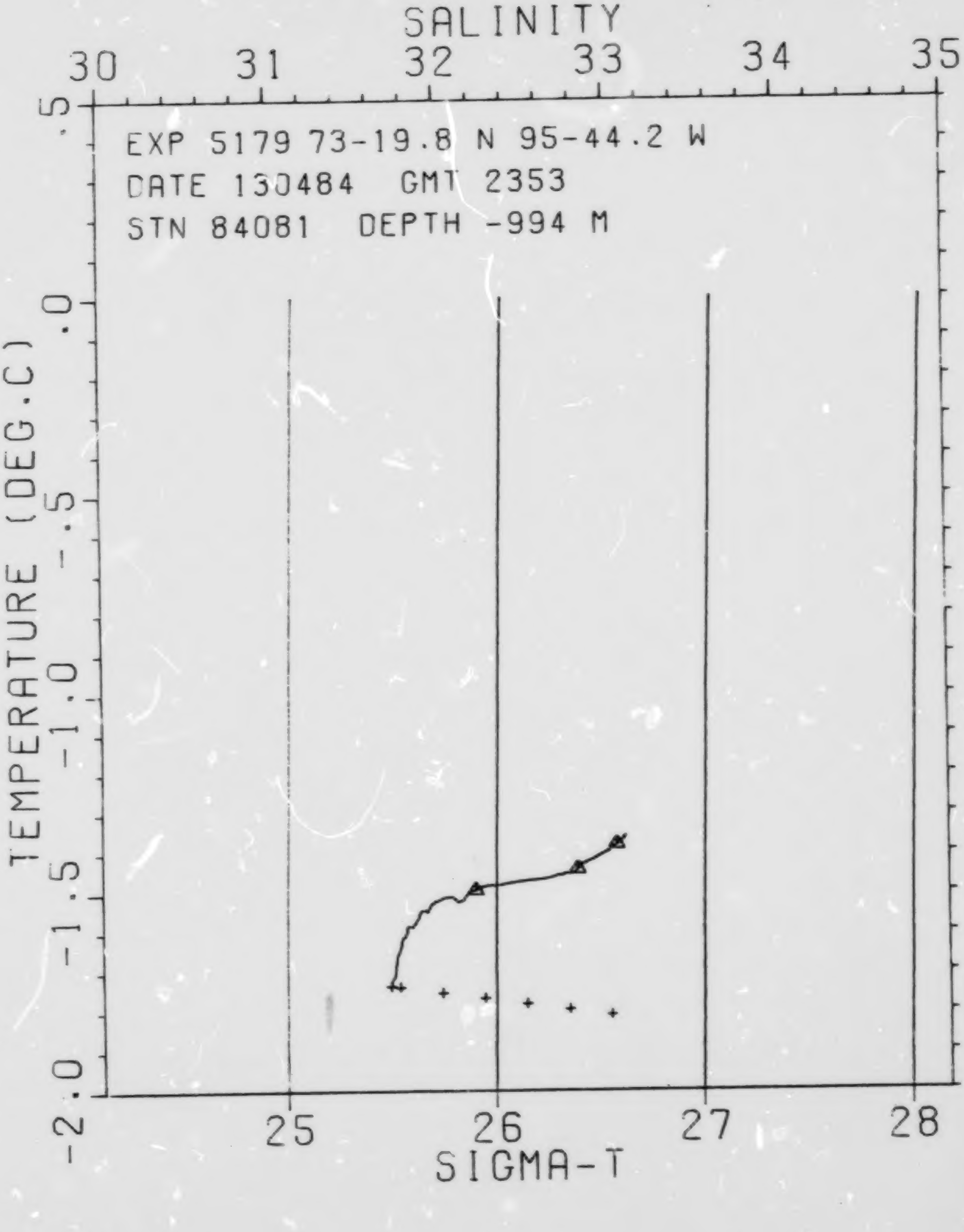
SIGMA-T



EXP 5179
73-19.8 N 95-44.2 W
DATE 130484 GMT 2353
STN 84081 DEPTH -994 M


SALINITY
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EXP 5179 73-19.8 N 95-44.2 W
DATE 130484 GMT 2353
STN 84081 DEPTH -994 M
TEMPERATURE (DEG.C)
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-1.5
-2.0
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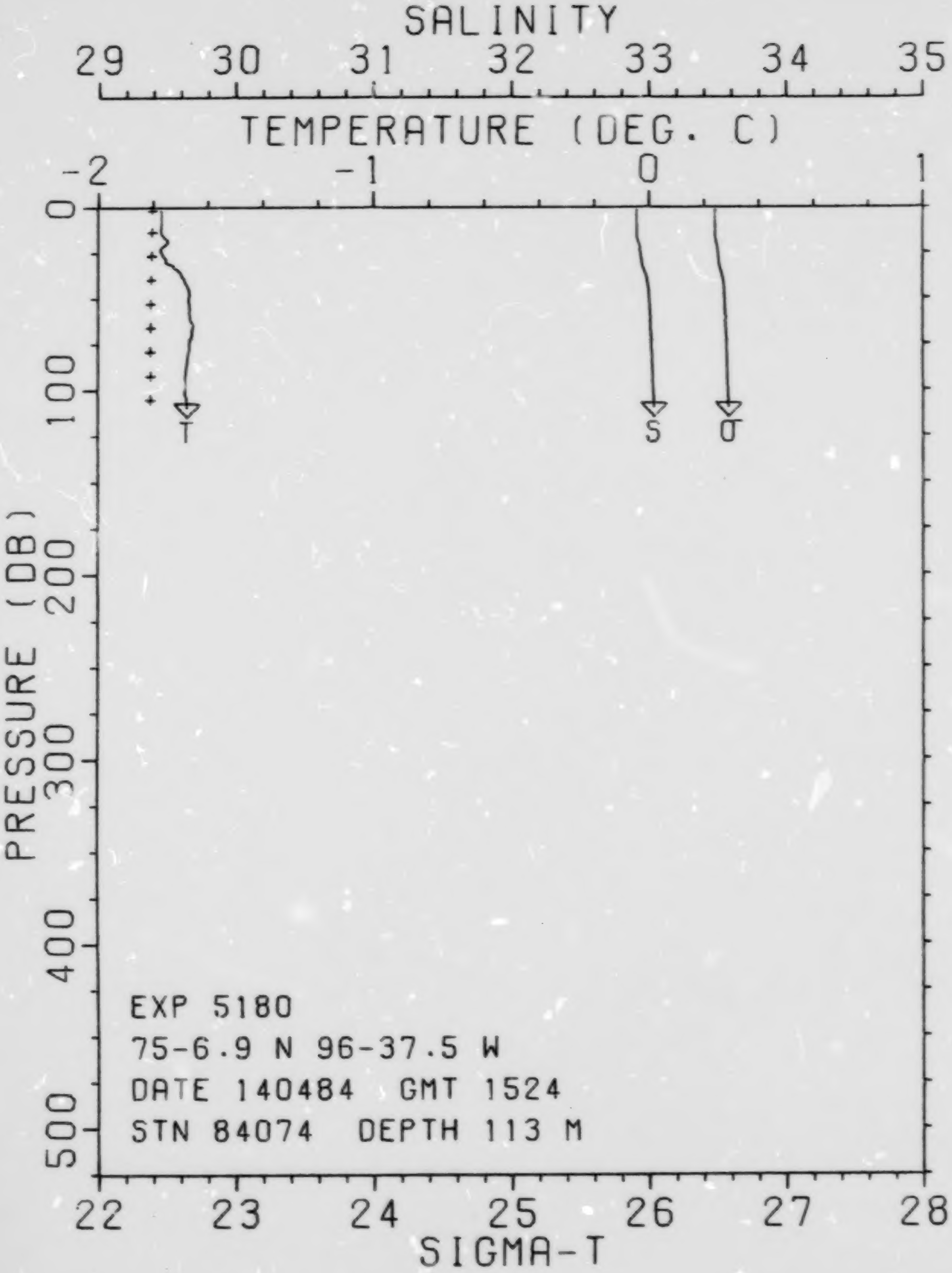
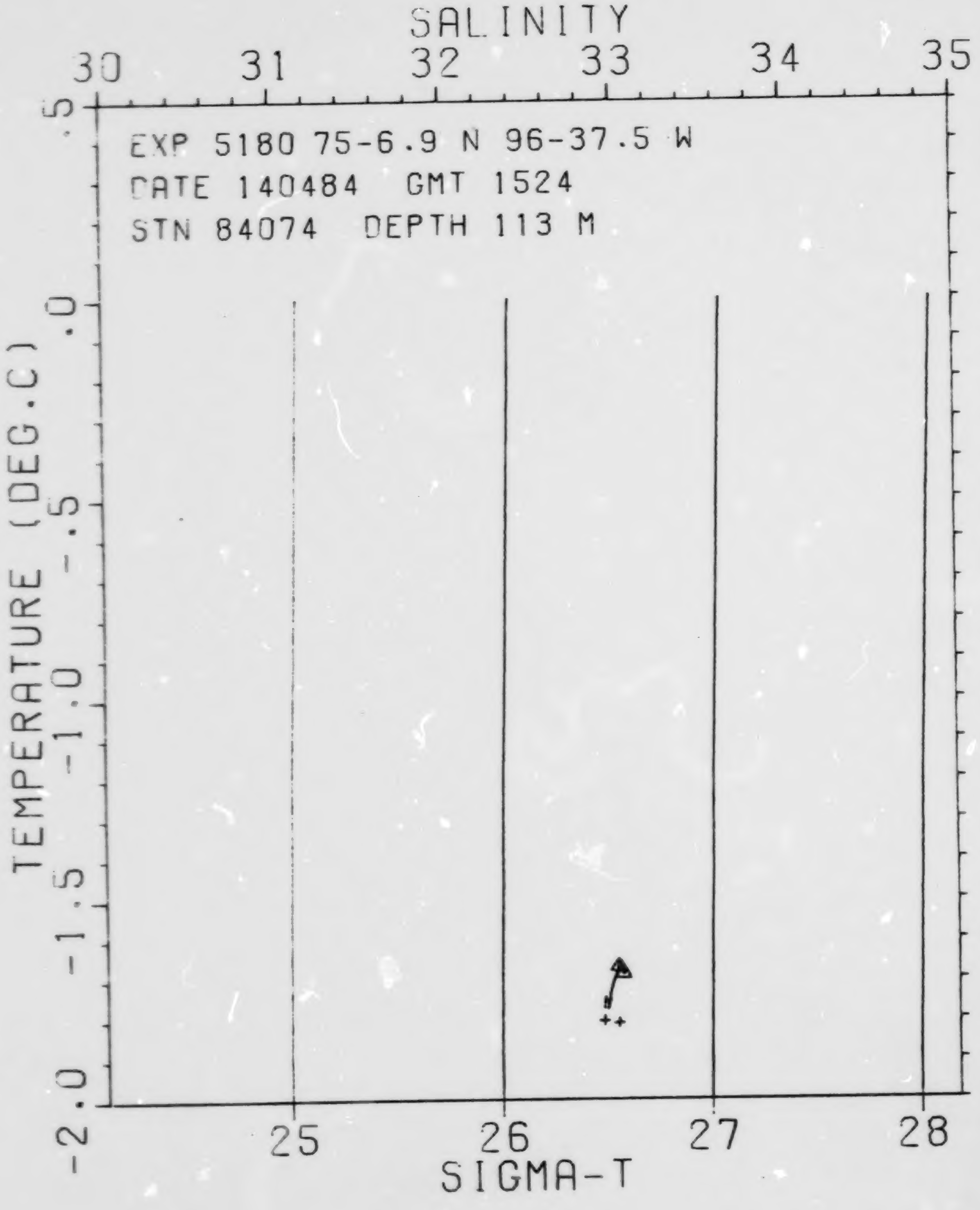
SIGMA-T



EXP 5180
75-6.9 N 96-37.5 W
DATE 140484 GMT 1524
STN 84074 DEPTH 113 M


SALINITY
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EXP 5180 75-6.9 N 96-37.5 W
DATE 140484 GMT 1524
STN 84074 DEPTH 113 M
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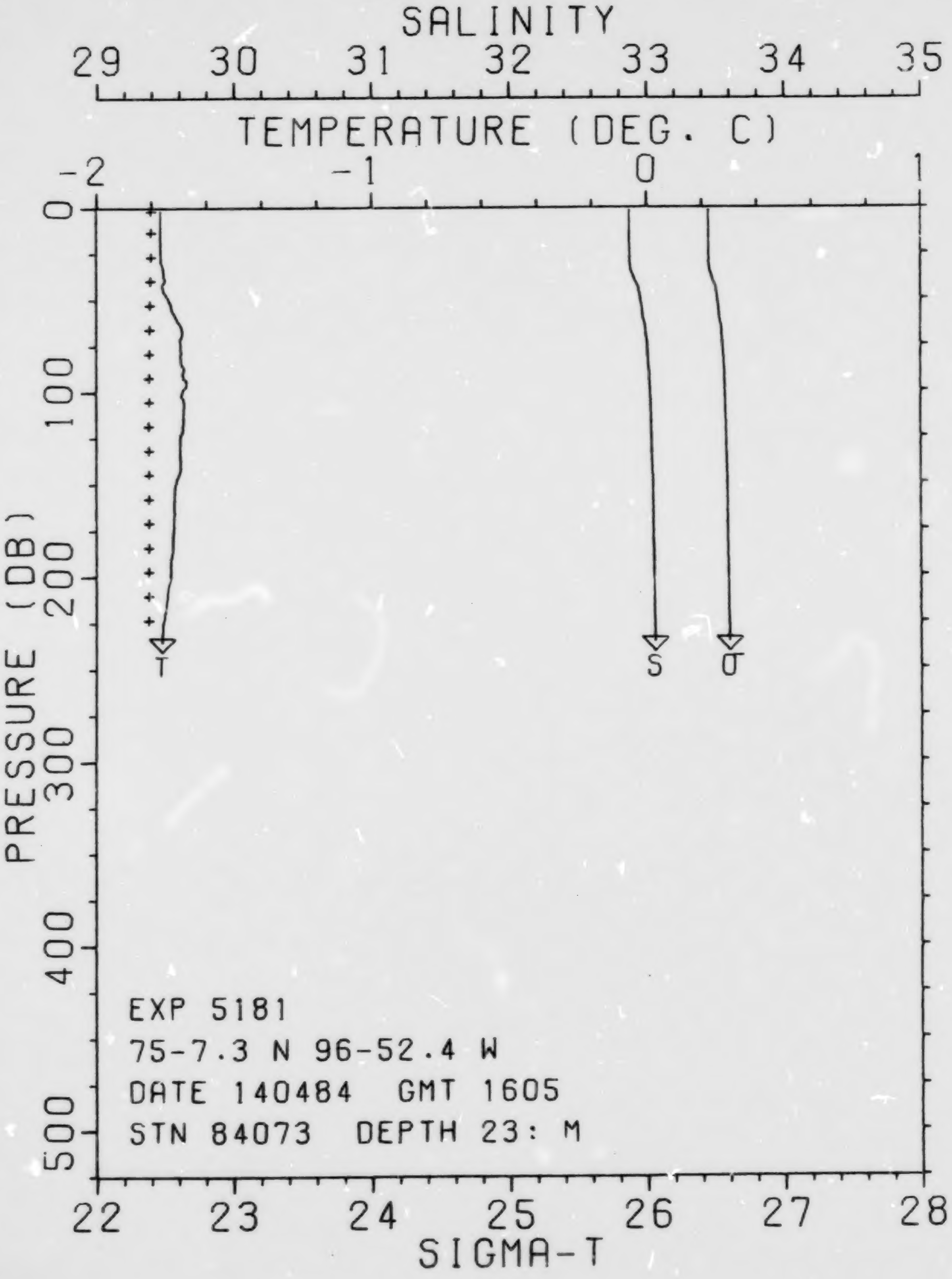
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5181
75-7.3 N 96-52.4 W
DATE 140484 GMT 1605
STN 84073 DEPTH 23: M
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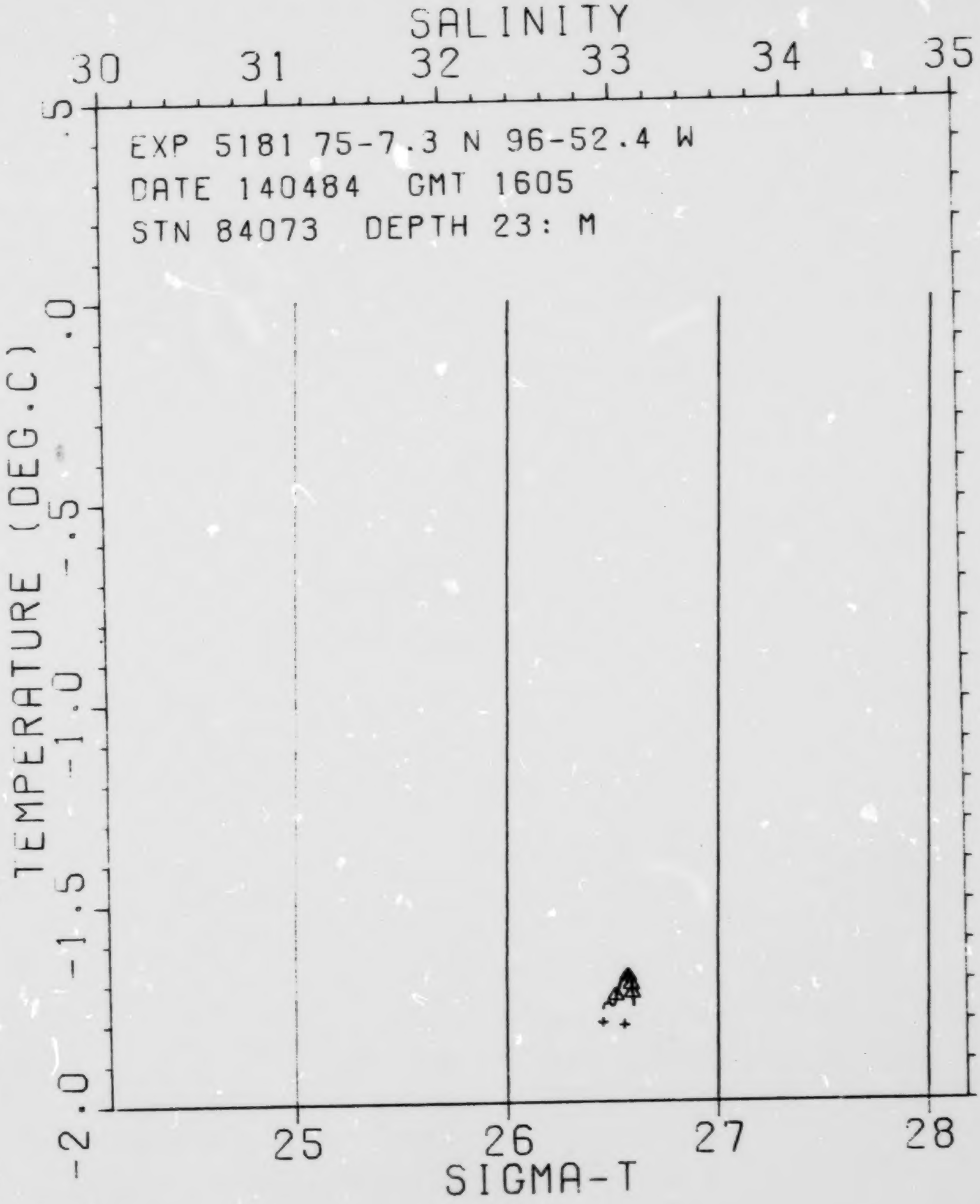
SIGMA-T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EXP 5181 75-7.3 N 96-52.4 W
DATE 140484 GMT 1605
STN 84073 DEPTH 23: M
TEMPERATURE (DEG.C)
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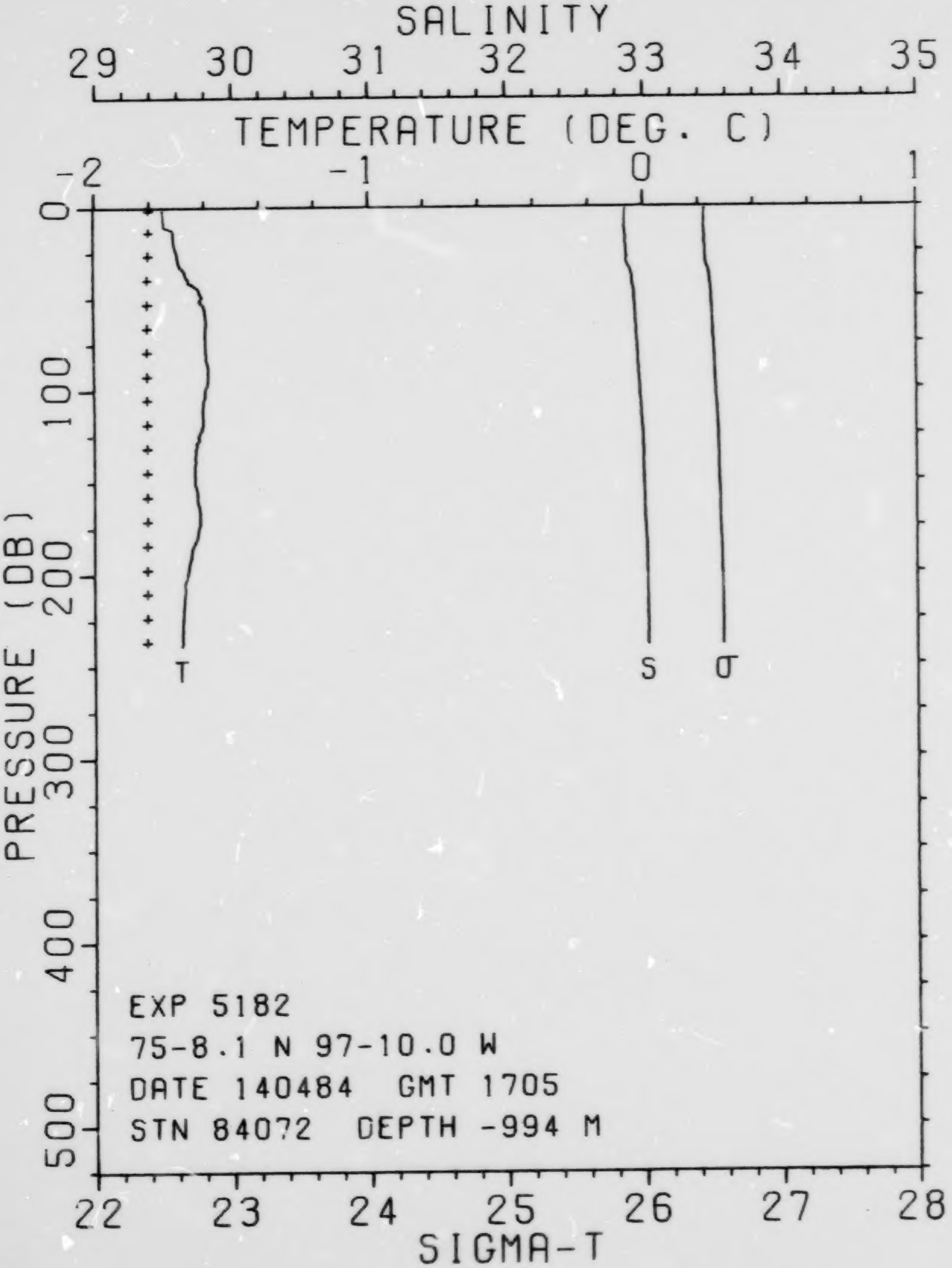
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5182
75-8.1 N 97-10.0 W
DATE 140484 GMT 1705
STN 84072 DEPTH -994 M
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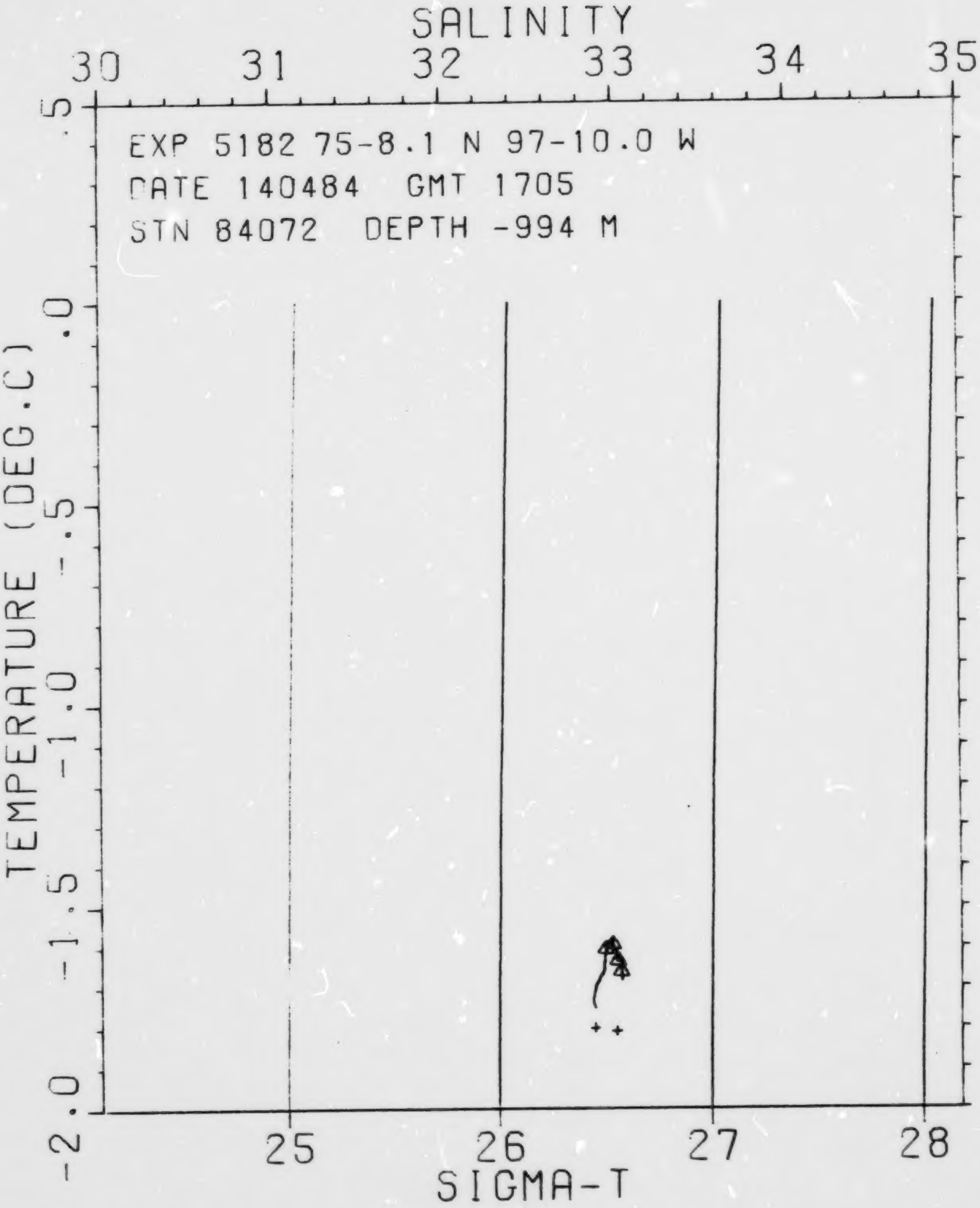
SIGMA-T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EXP 5182 75-8.1 N 97-10.0 W
DATE 140484 GMT 1705
STN 84072 DEPTH -994 M
TEMPERATURE (DEG.C)
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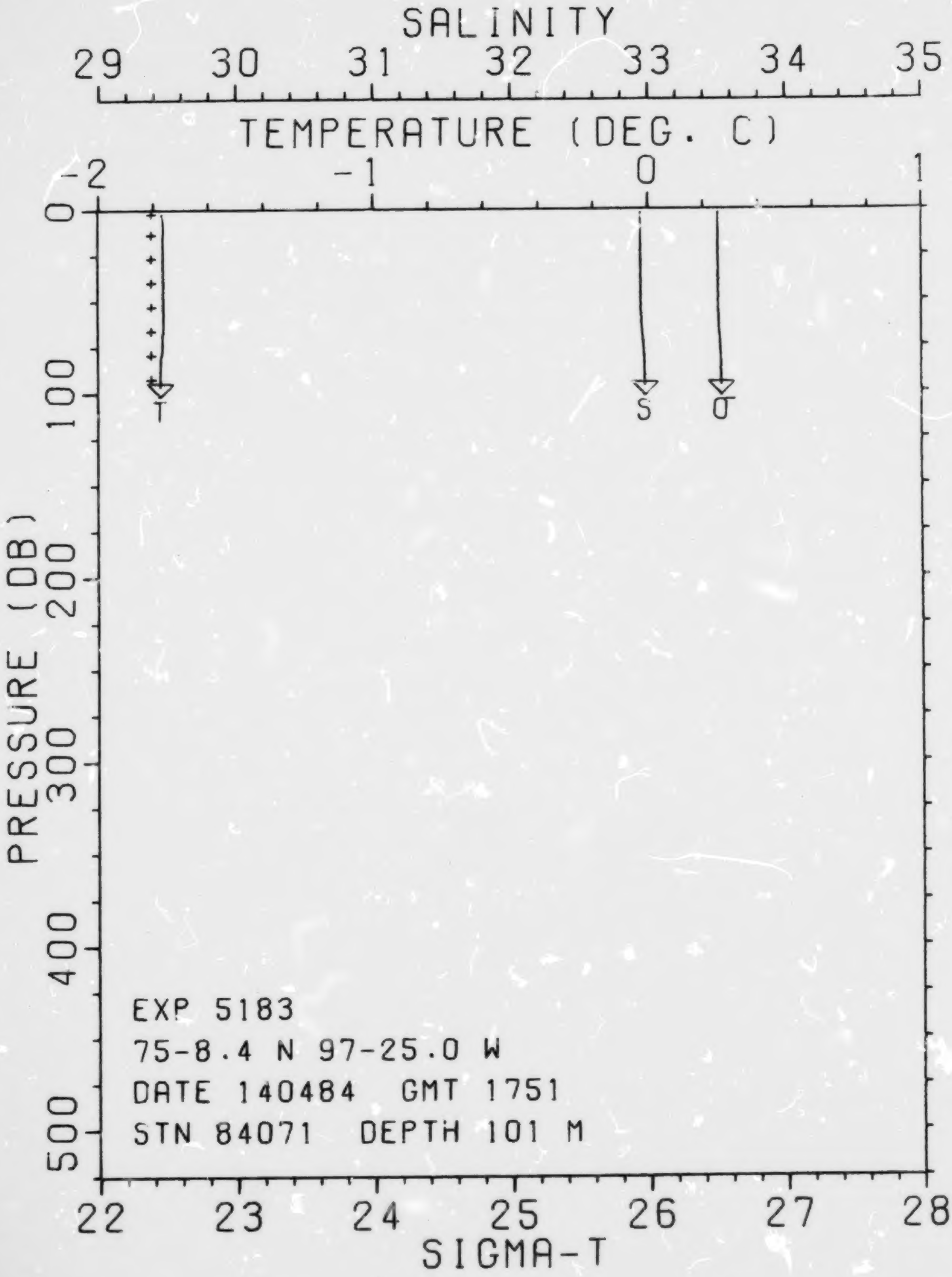
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5183
75-8.4 N 97-25.0 W
DATE 140484 GMT 1751
STN 84071 DEPTH 101 M
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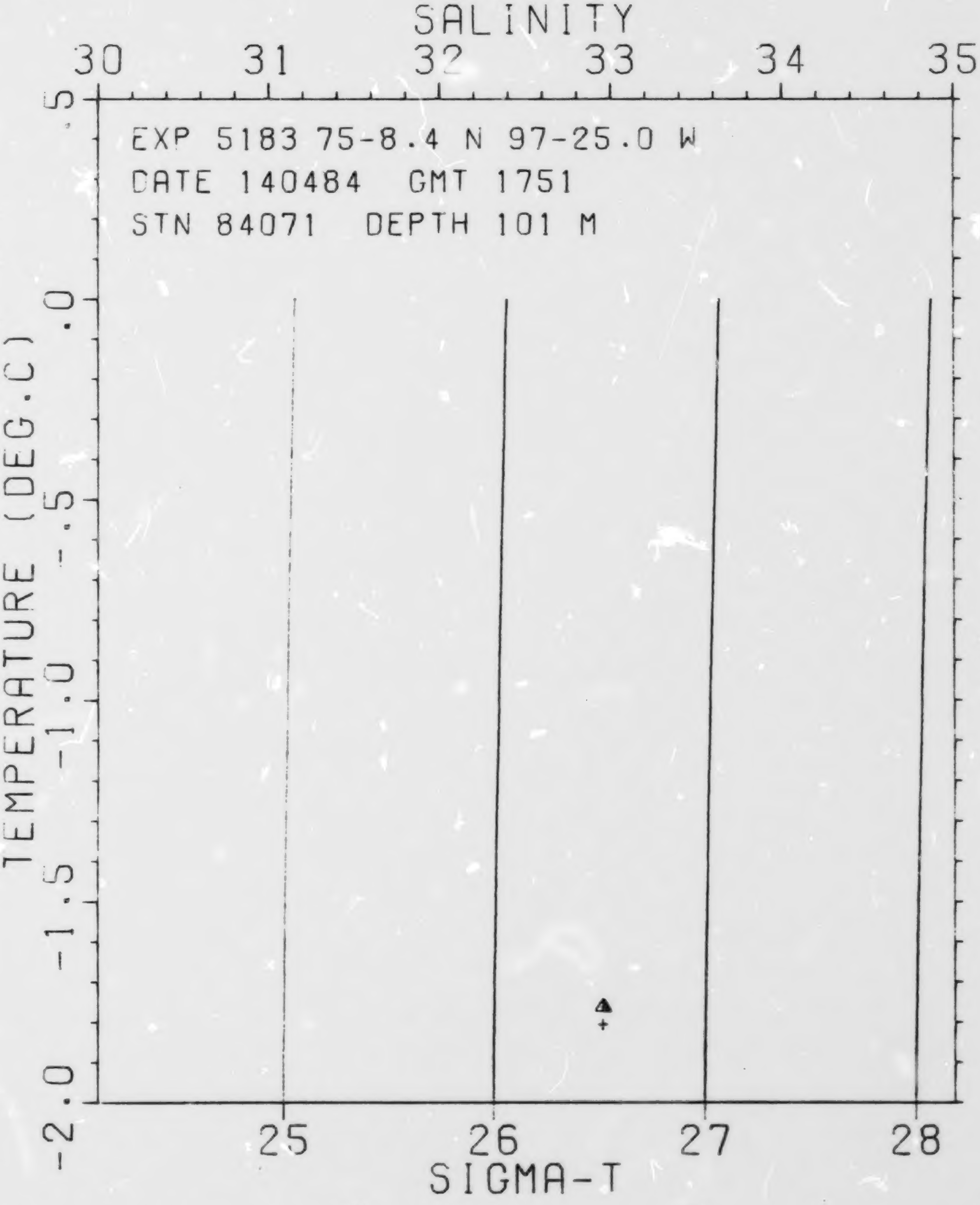
SIGMA-T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EXP 5183 75-8.4 N 97-25.0 W
DATE 140484 GMT 1751
STN 84071 DEPTH 101 M
TEMPERATURE (DEG.C)
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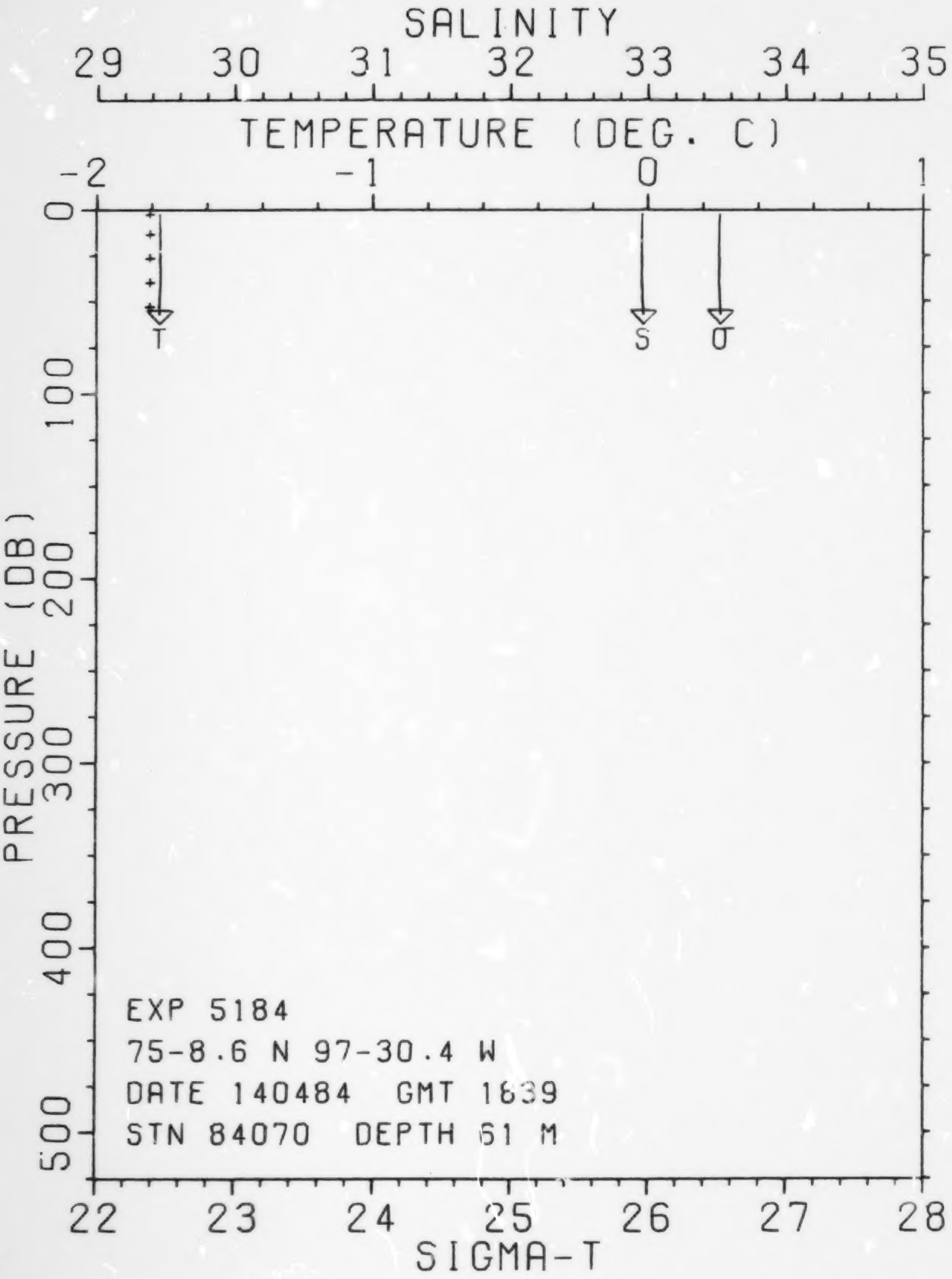
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5184
75-8.6 N 97-30.4 W
DATE 140484 GMT 1639
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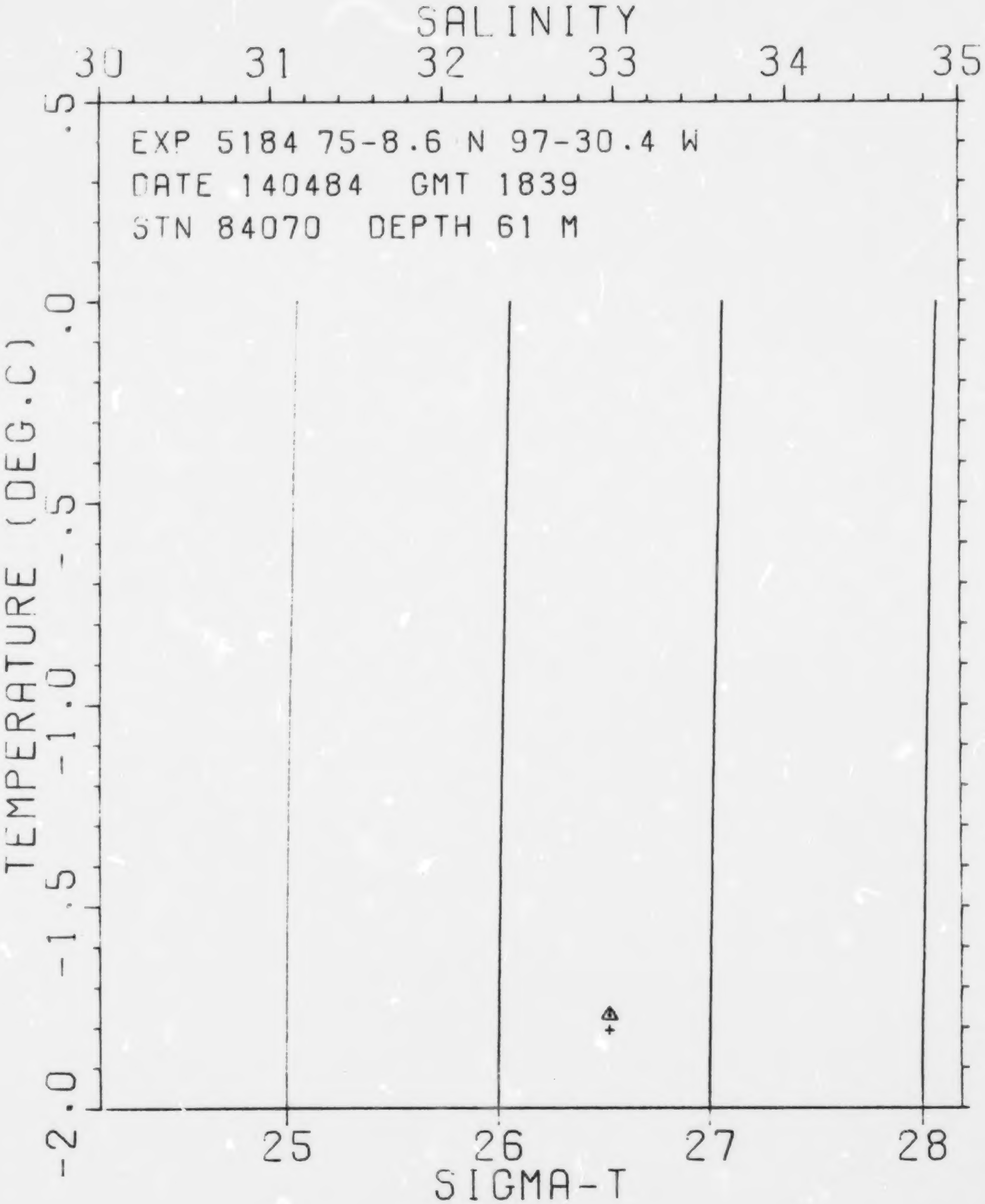
SIGMA-T


SALINITY
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EXP 5184 75-8.6 N 97-30.4 W
DATE 140484 GMT 1839
STN 84070 DEPTH 61 M
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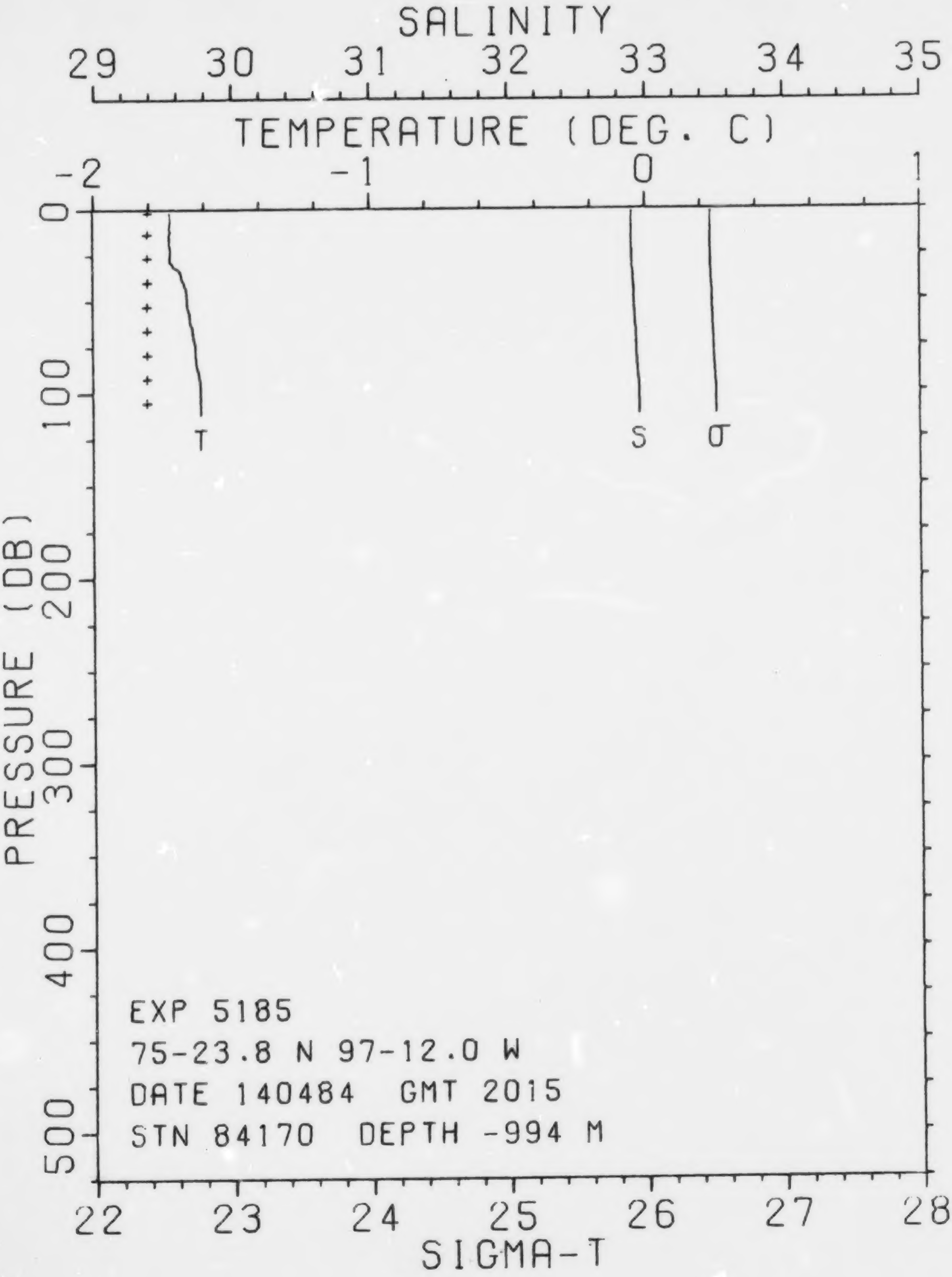
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
0
100
200
300
400
500
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EXP 5185
75-23.8 N 97-12.0 W
DATE 140484 GMT 2015
STN 84170 DEPTH -994 M
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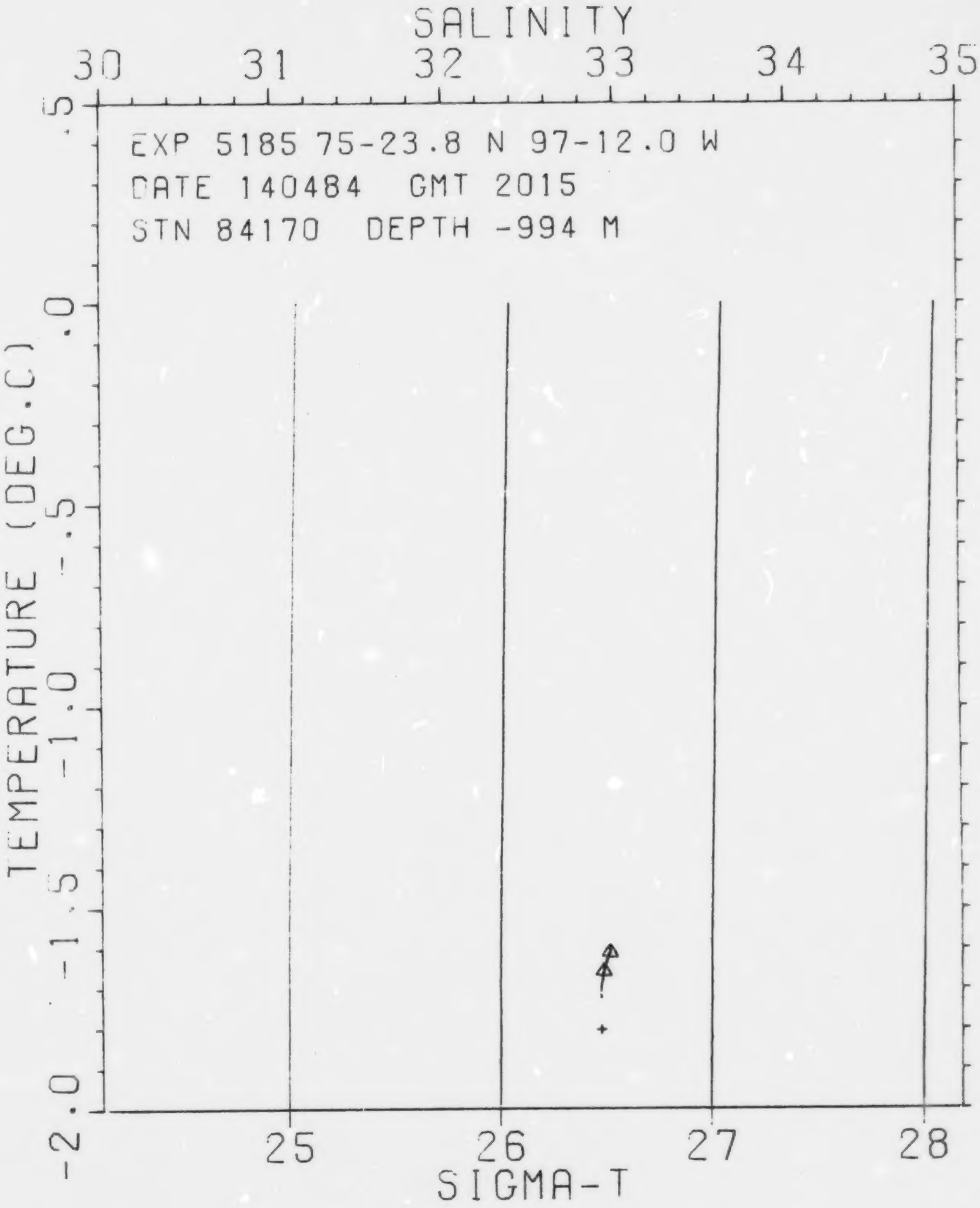
SIGMA-T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TEMPERATURE (DEG.C)
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DATE 140484 GMT 2015
STN 84170 DEPTH -994 M
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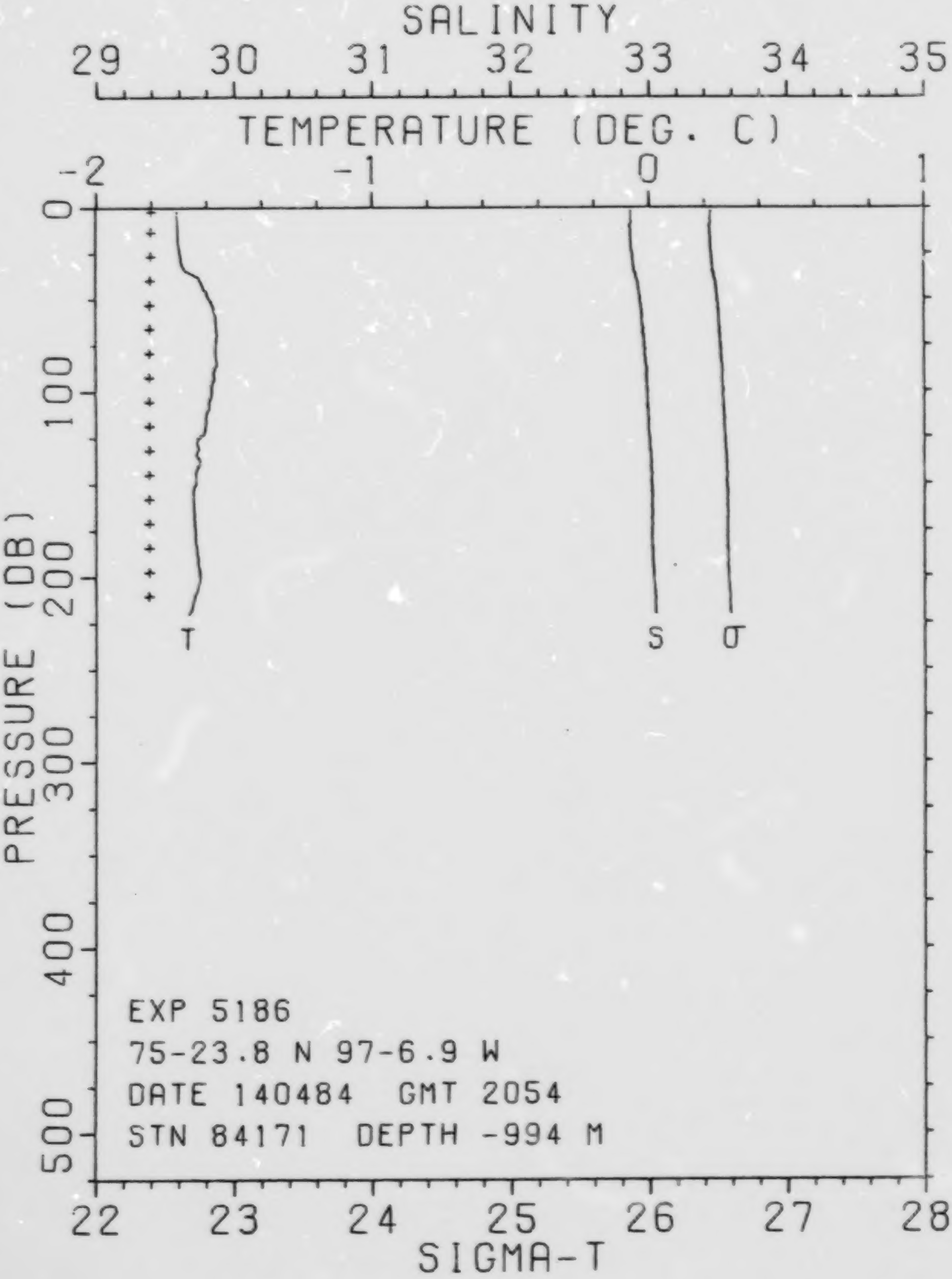
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
0
100
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EXP 5186
75-23.8 N 97-6.9 W
DATE 140484 GMT 2054
STN 84171 DEPTH -994 M
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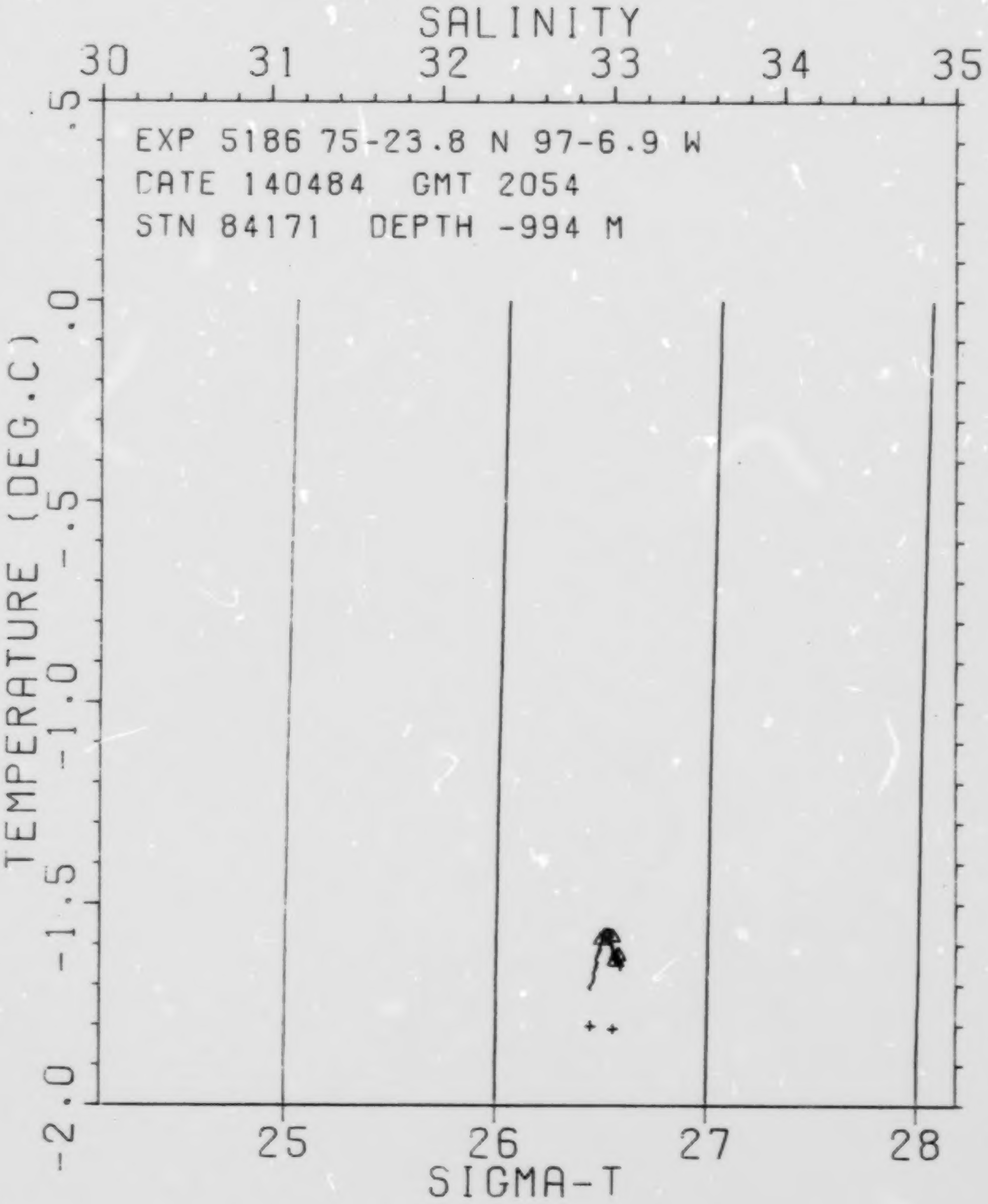
SIGMA-T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STN 84171 DEPTH -994 M
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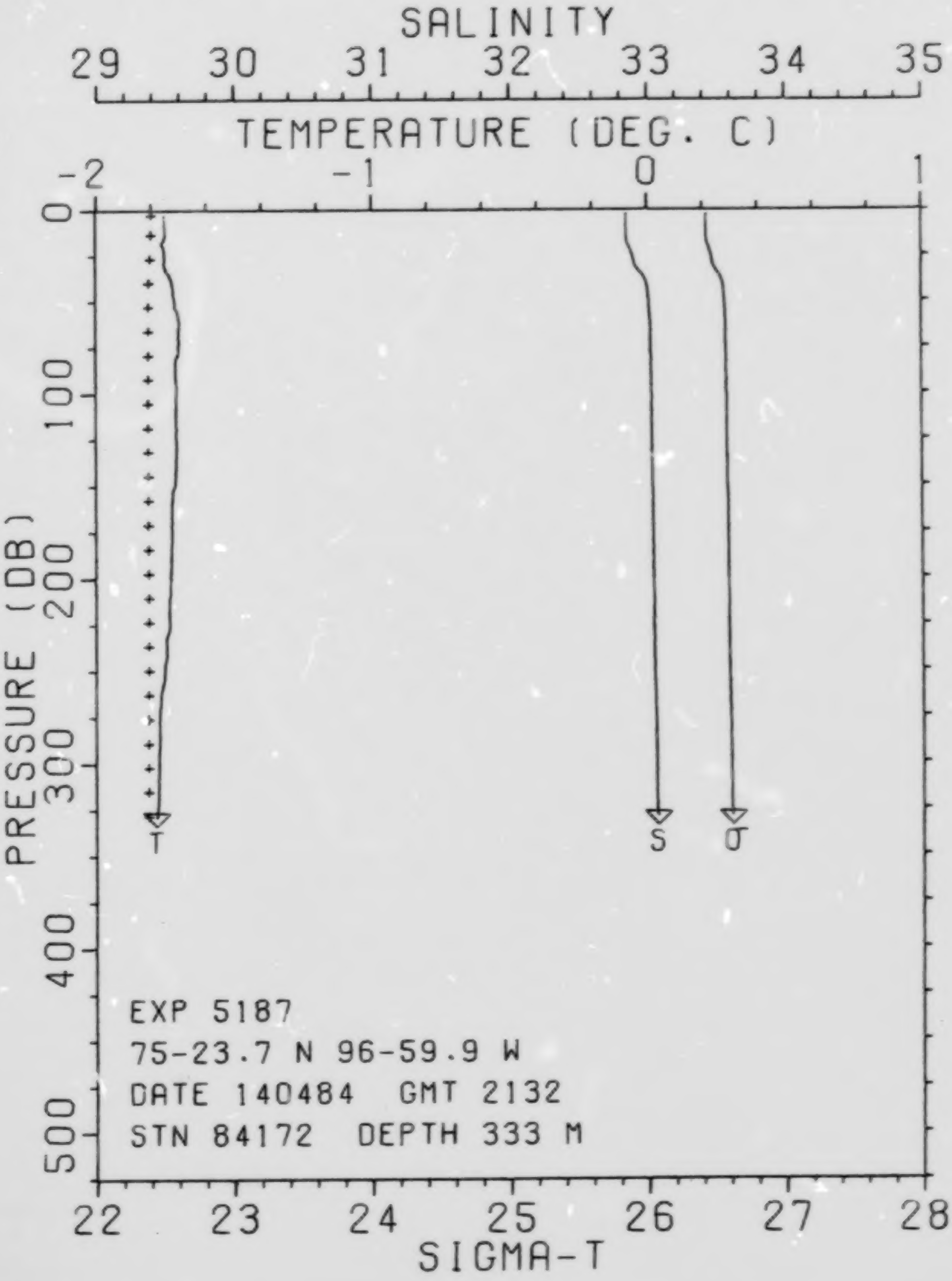
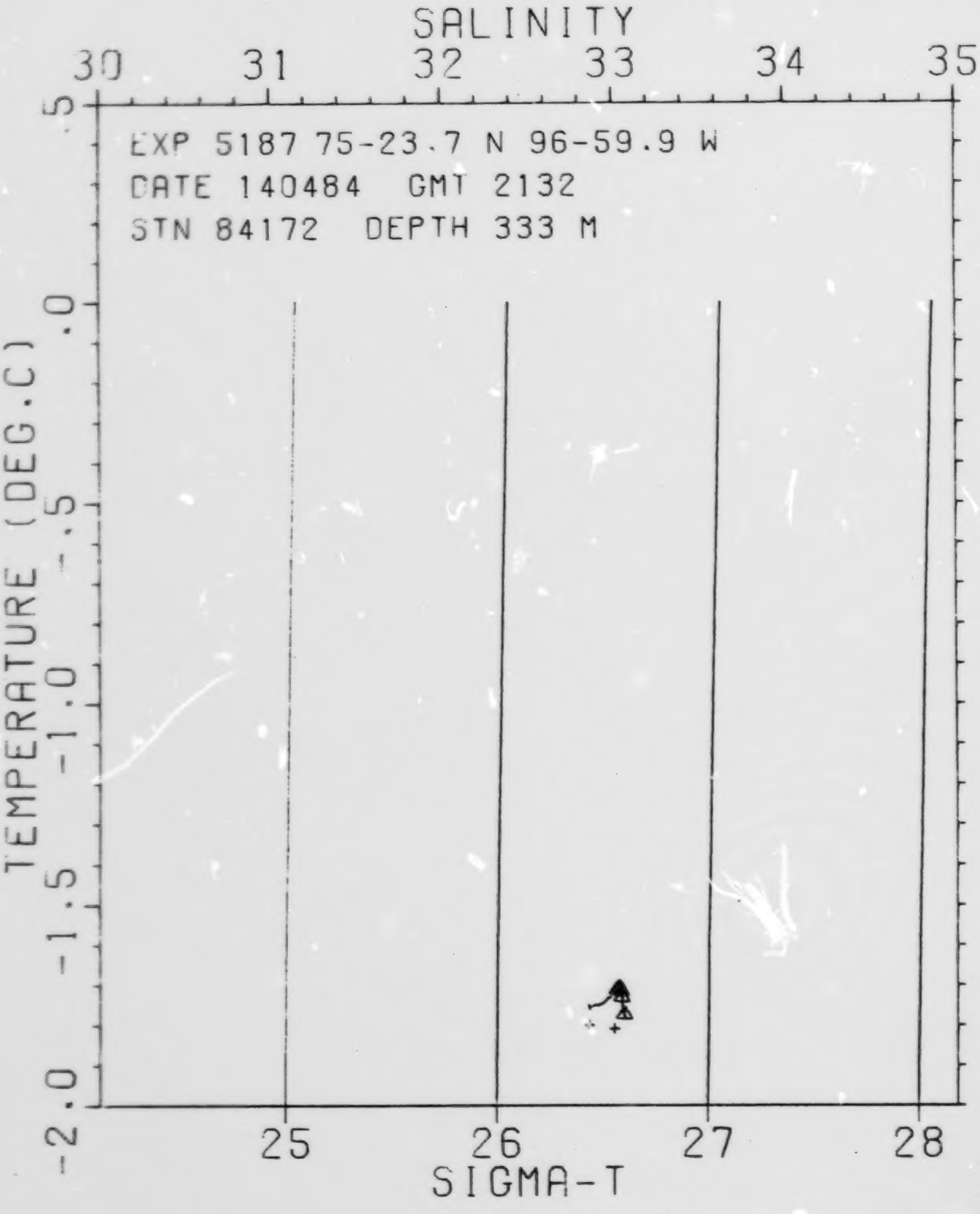


EXP 5187
75-23.7 N 96-59.9 W
DATE 140484 GMT 2132
STN 84172 DEPTH 333 M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EXP 5187 75-23.7 N 96-59.9 W
DATE 140484 GMT 2132
STN 84172 DEPTH 333 M
TEMPERATURE (DEG.C)
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-.5
-1.0
-1.5
-2.0
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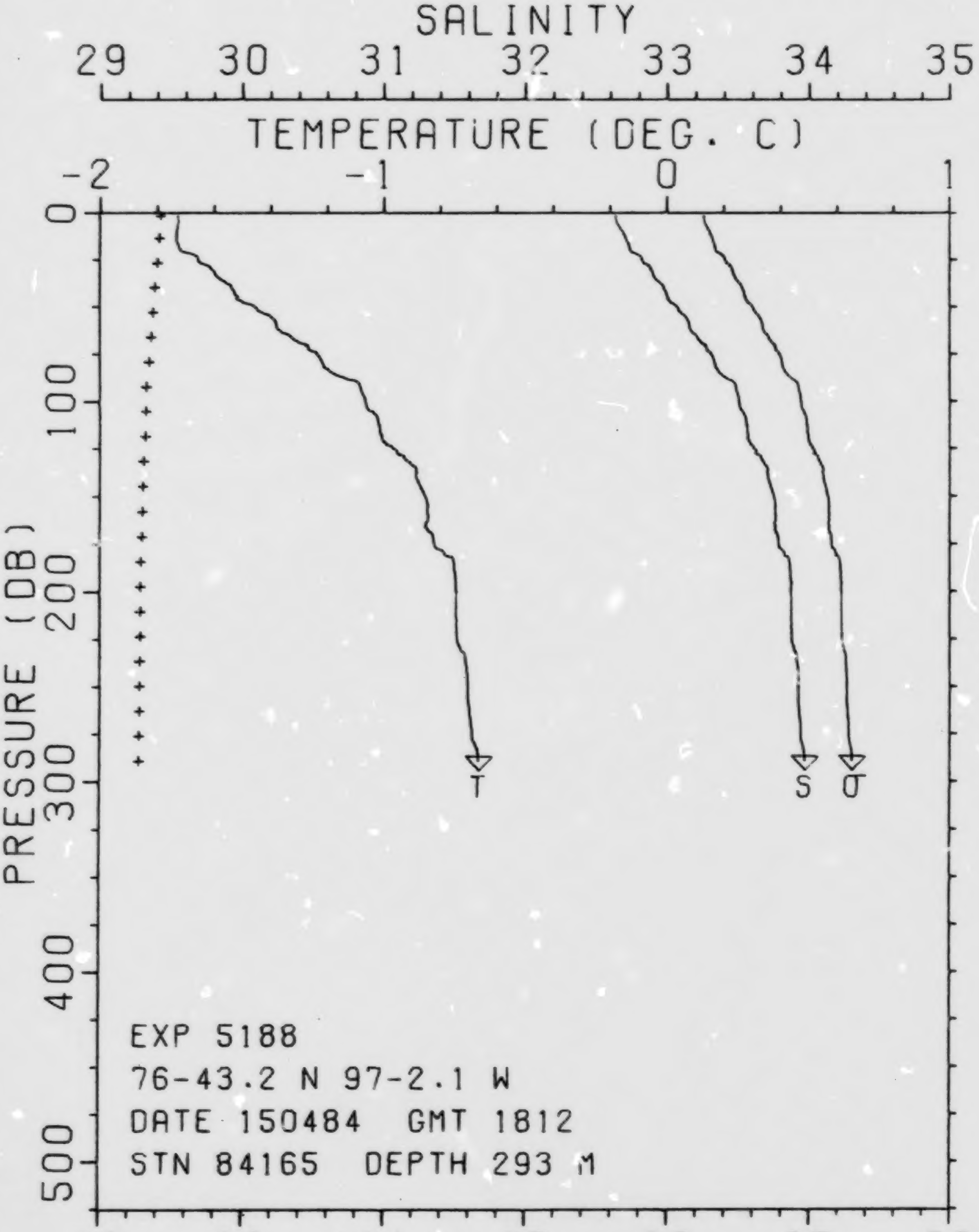
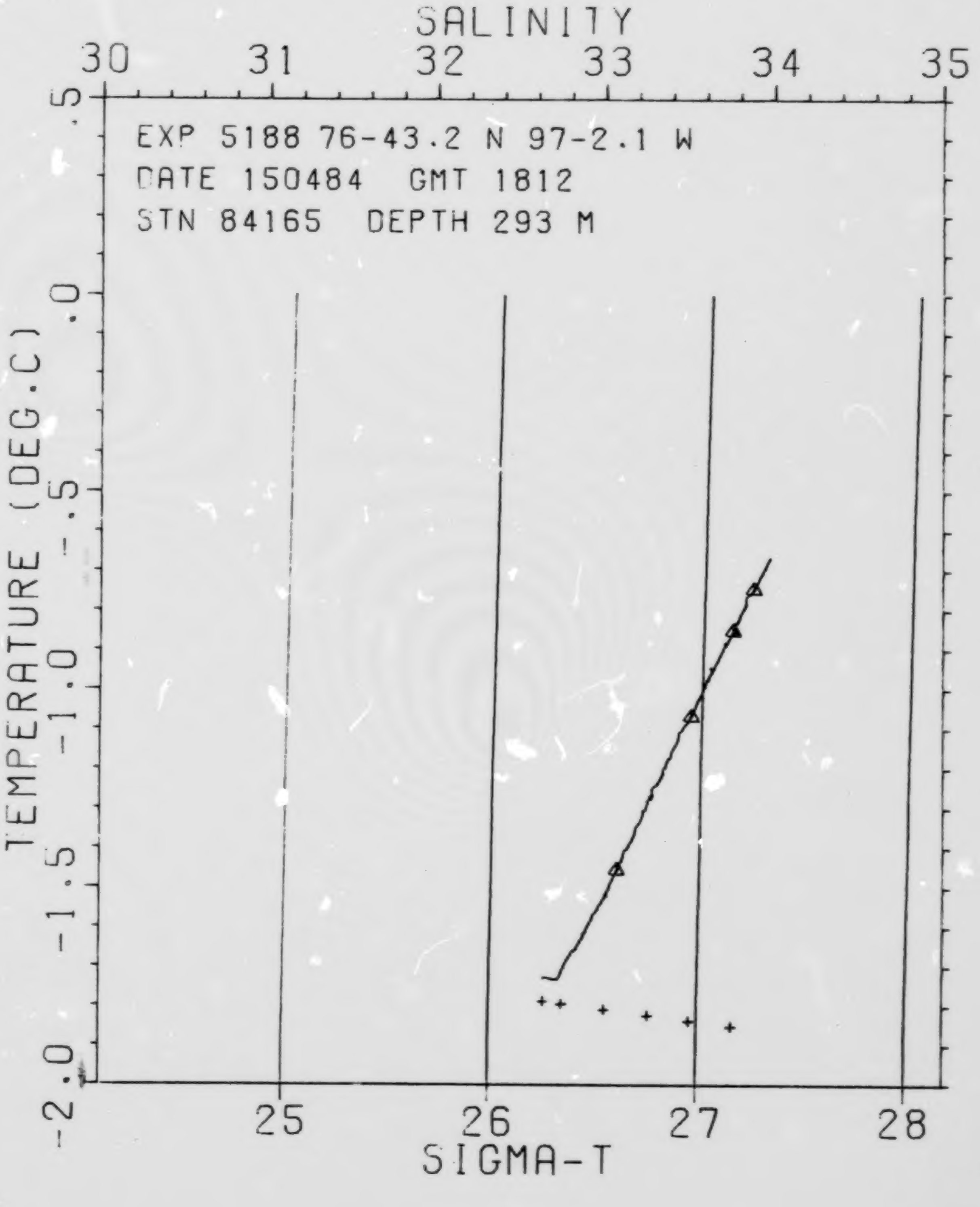
SIGMA-T



EXP 5188
76-43.2 N 97-2.1 W
DATE 150484 GMT 1812
STN 84165 DEPTH 293 M


SALINITY
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EXP 5188 76-43.2 N 97-2.1 W
DATE 150484 GMT 1812
STN 84165 DEPTH 293 M
TEMPERATURE (DEG.C)
.5
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-1.5
-2.0
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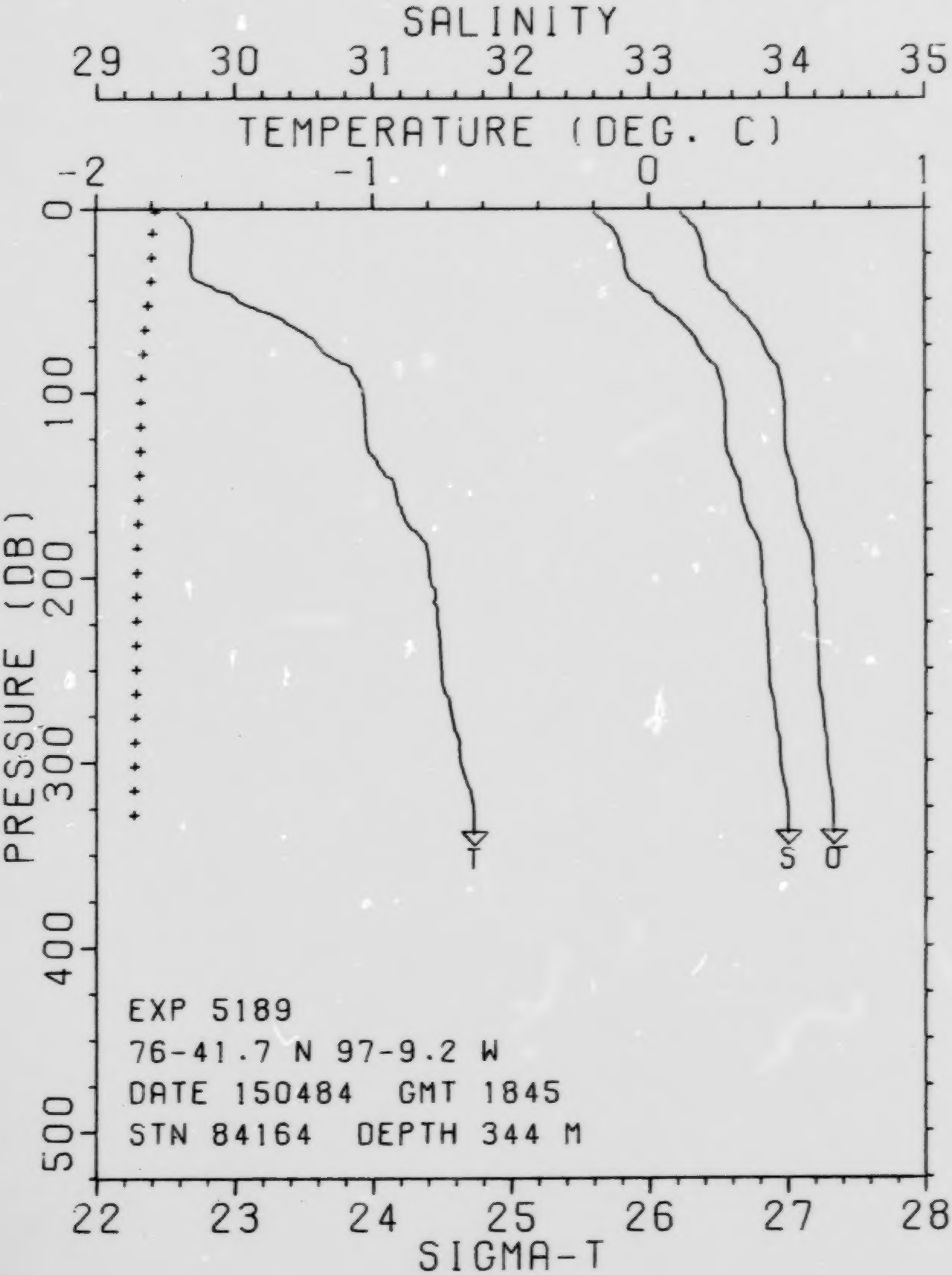
SIGMA-T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TEMPERATURE (DEG. C)
-2
-1
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1
PRESSURE (DB)
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EXP 5189
76-41.7 N 97-9.2 W
DATE 150484 GMT 1845
STN 84164 DEPTH 344 M
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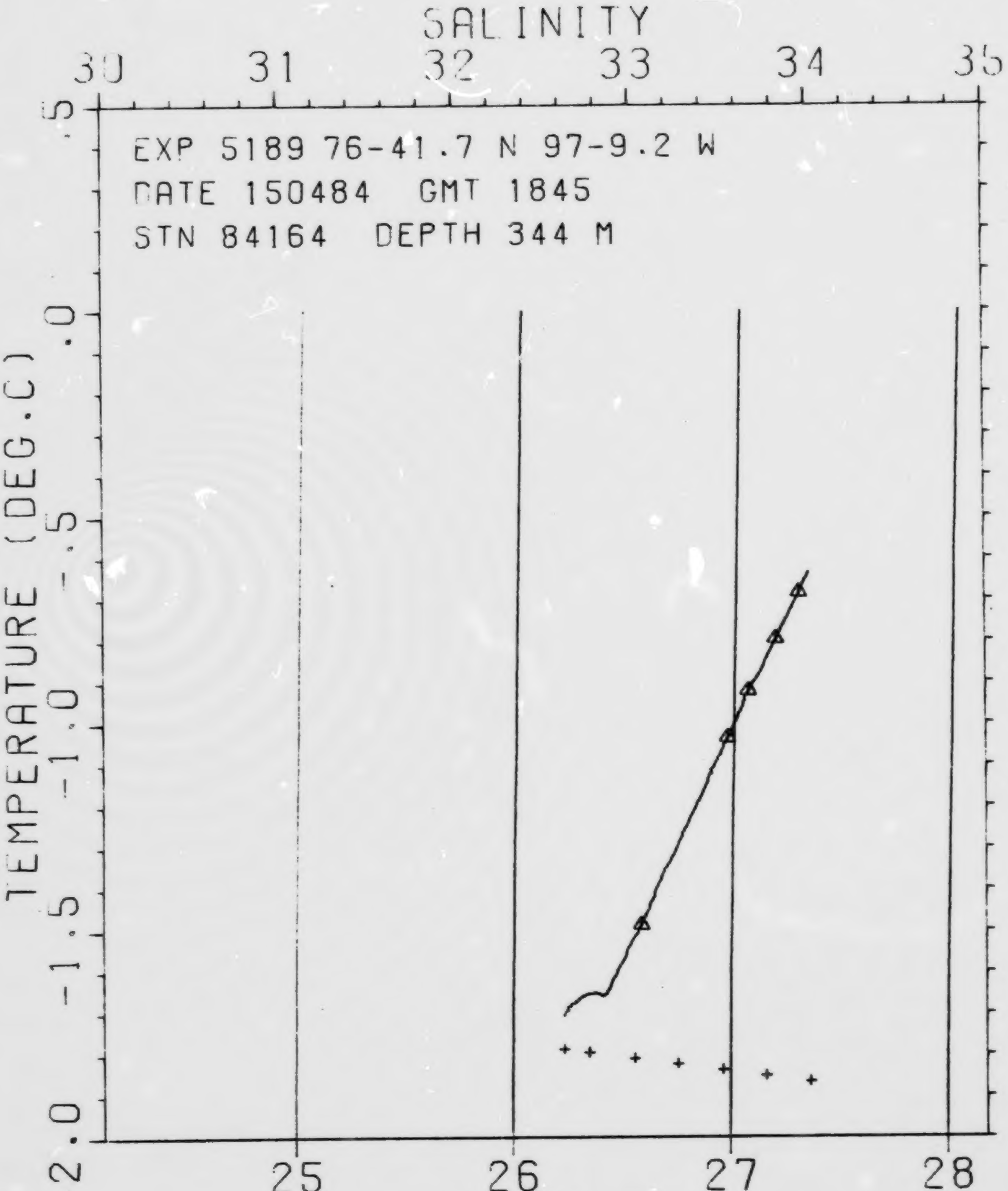
SIGMA-T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EXP 5189 76-41.7 N 97-9.2 W
DATE 150484 GMT 1845
STN 84164 DEPTH 344 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
25
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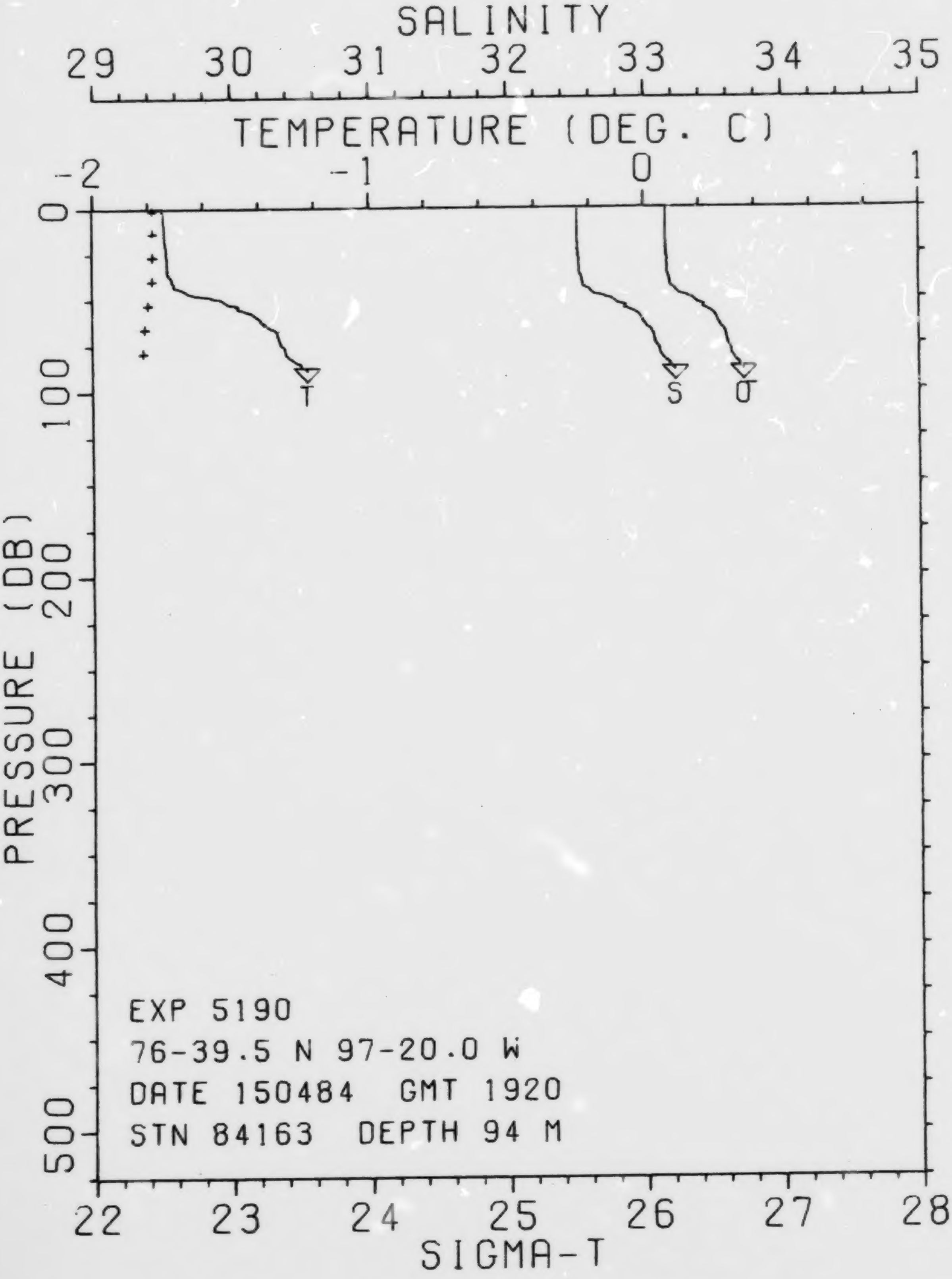
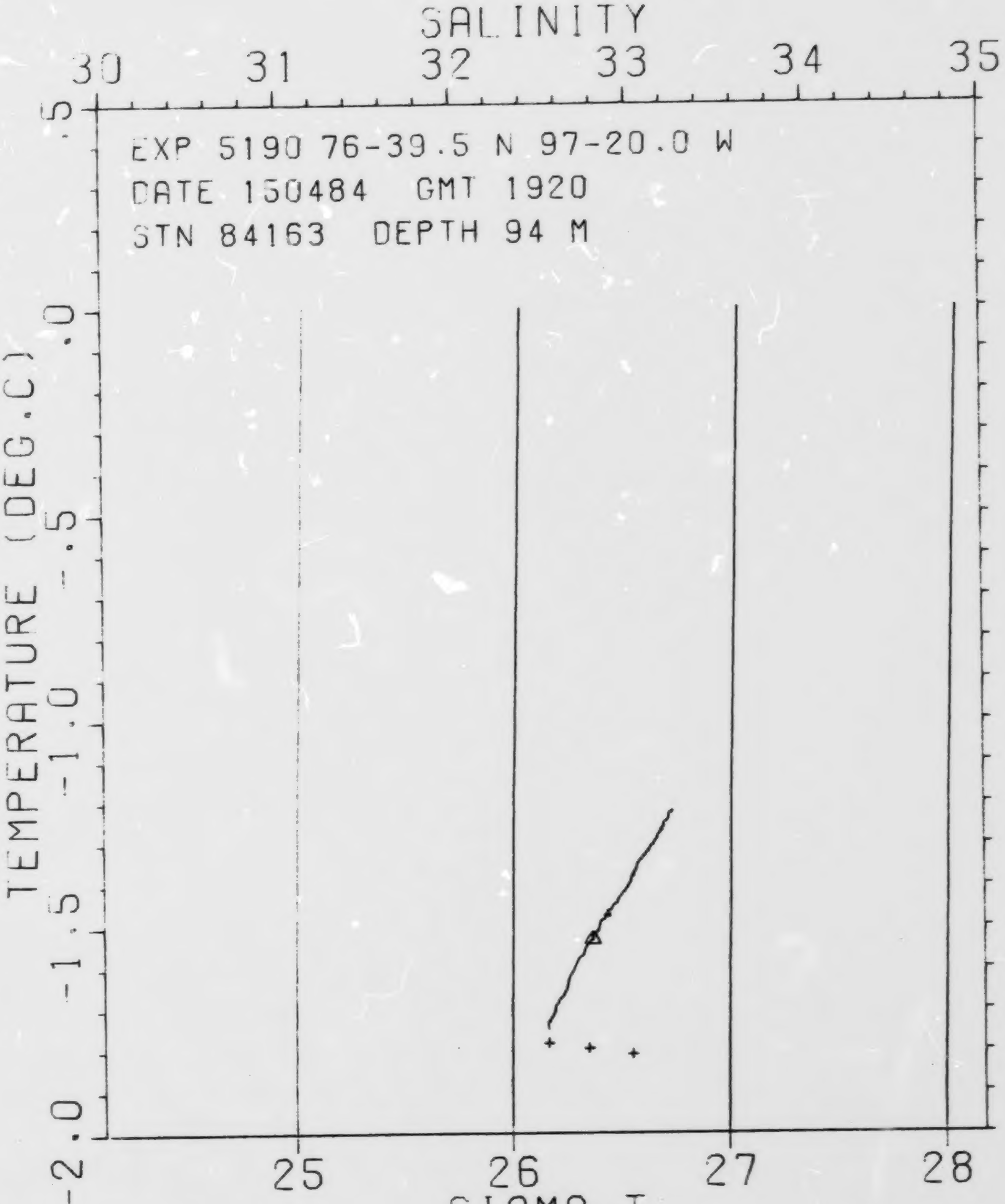
SIGMA-T



EXP 5190
76-39.5 N 97-20.0 W
DATE 150484 GMT 1920
STN 84163 DEPTH 94 M


SALINITY
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EXP 5190 76-39.5 N 97-20.0 W
DATE 150484 GMT 1920
STN 84163 DEPTH 94 M
TEMPERATURE (DEG.C)
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.0
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-1.0
-1.5
-2.0
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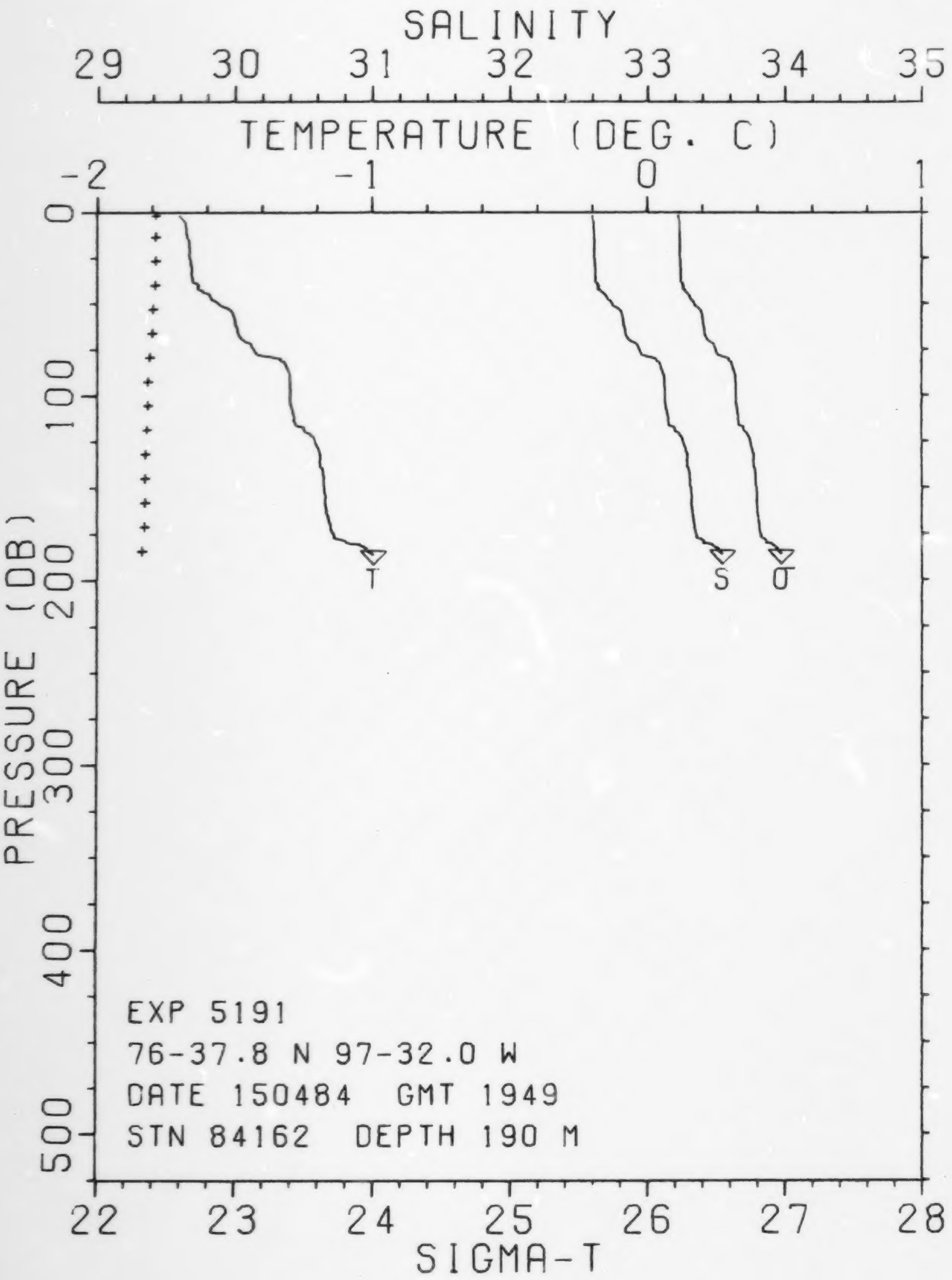
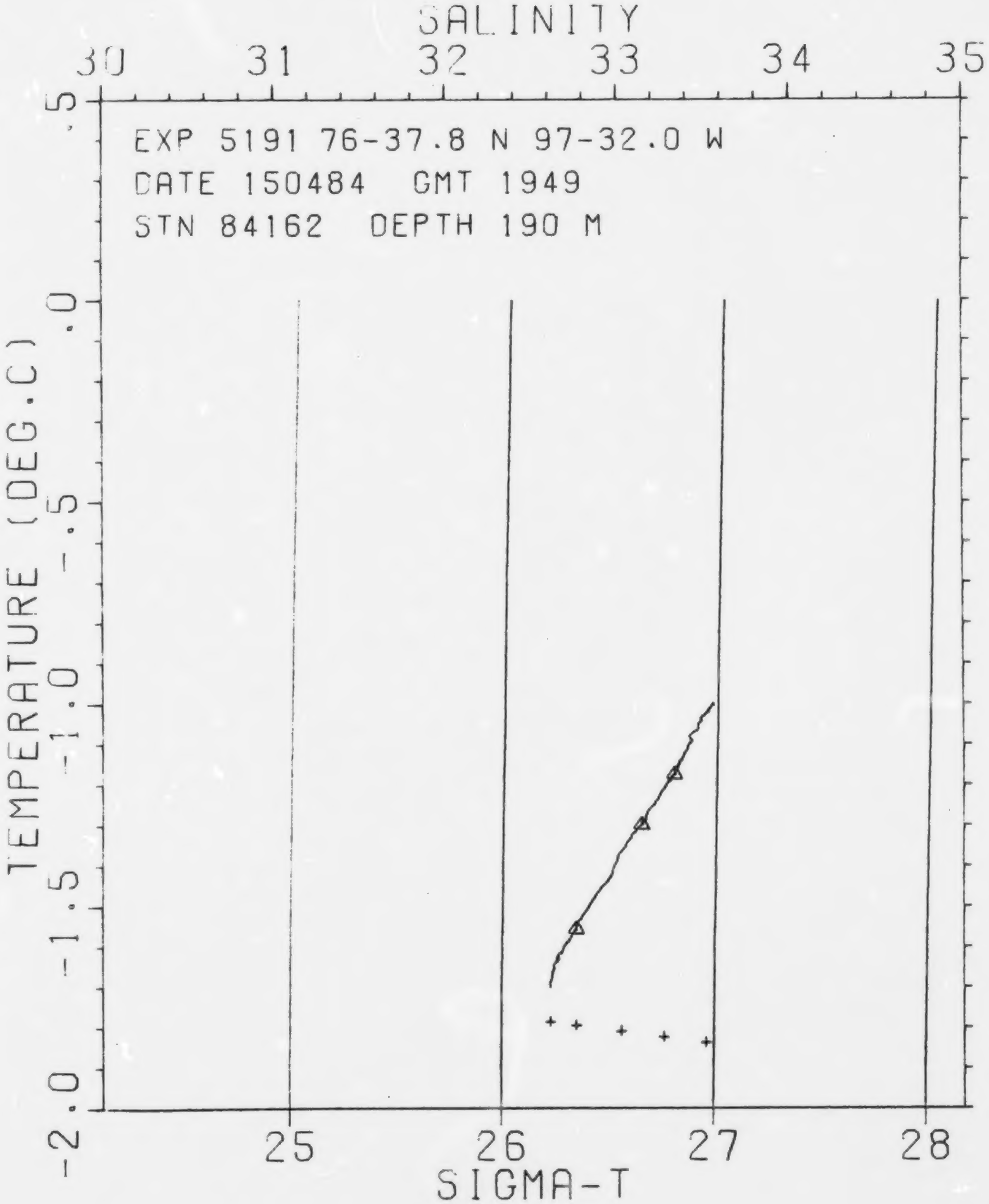
SIGMA-T



EXP 5191
76-37.8 N 97-32.0 W
DATE 150484 GMT 1949
STN 84162 DEPTH 190 M


SALINITY
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EXP 5191 76-37.8 N 97-32.0 W
DATE 150484 GMT 1949
STN 84162 DEPTH 190 M
TEMPERATURE (DEG.C)
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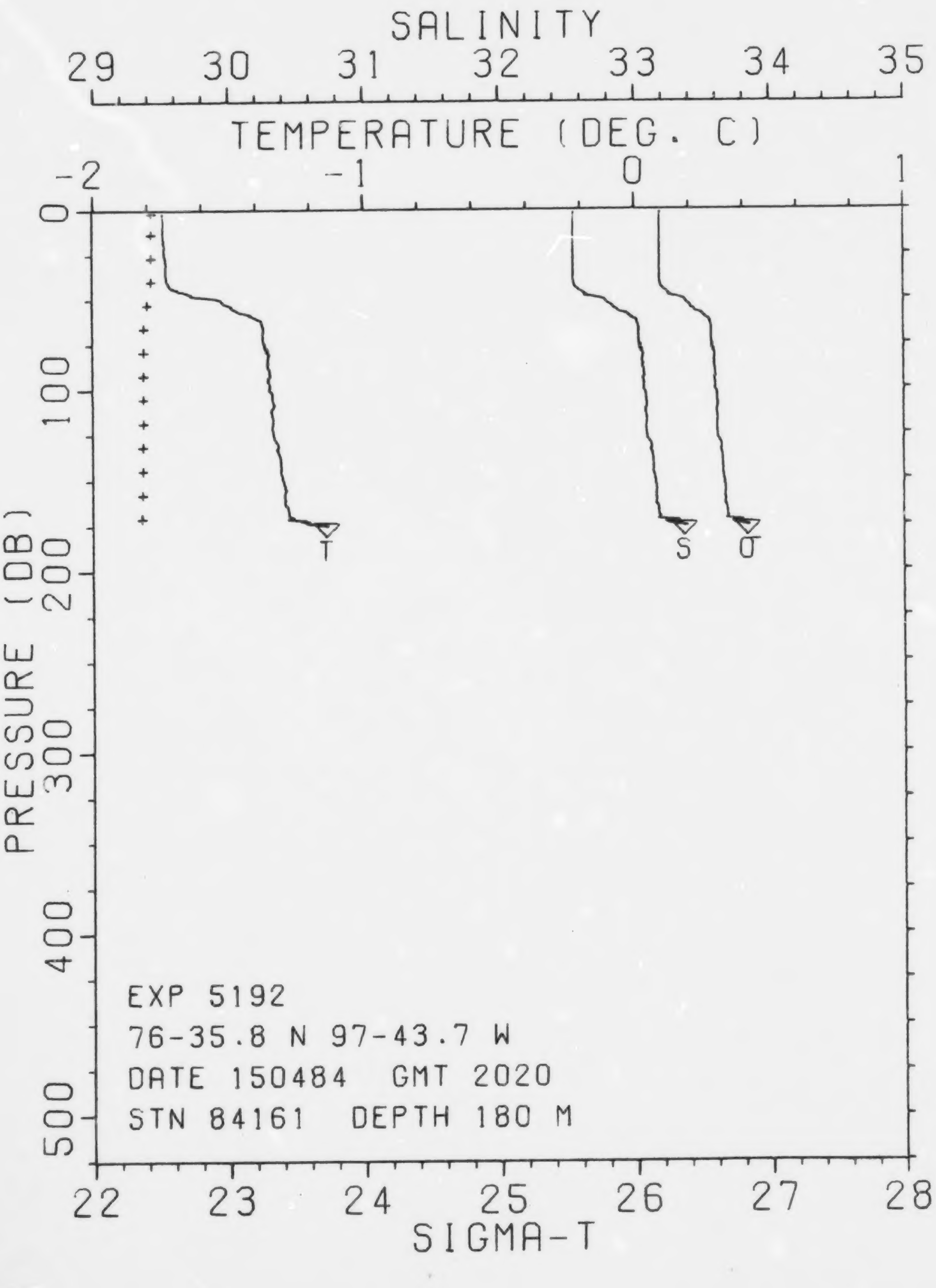
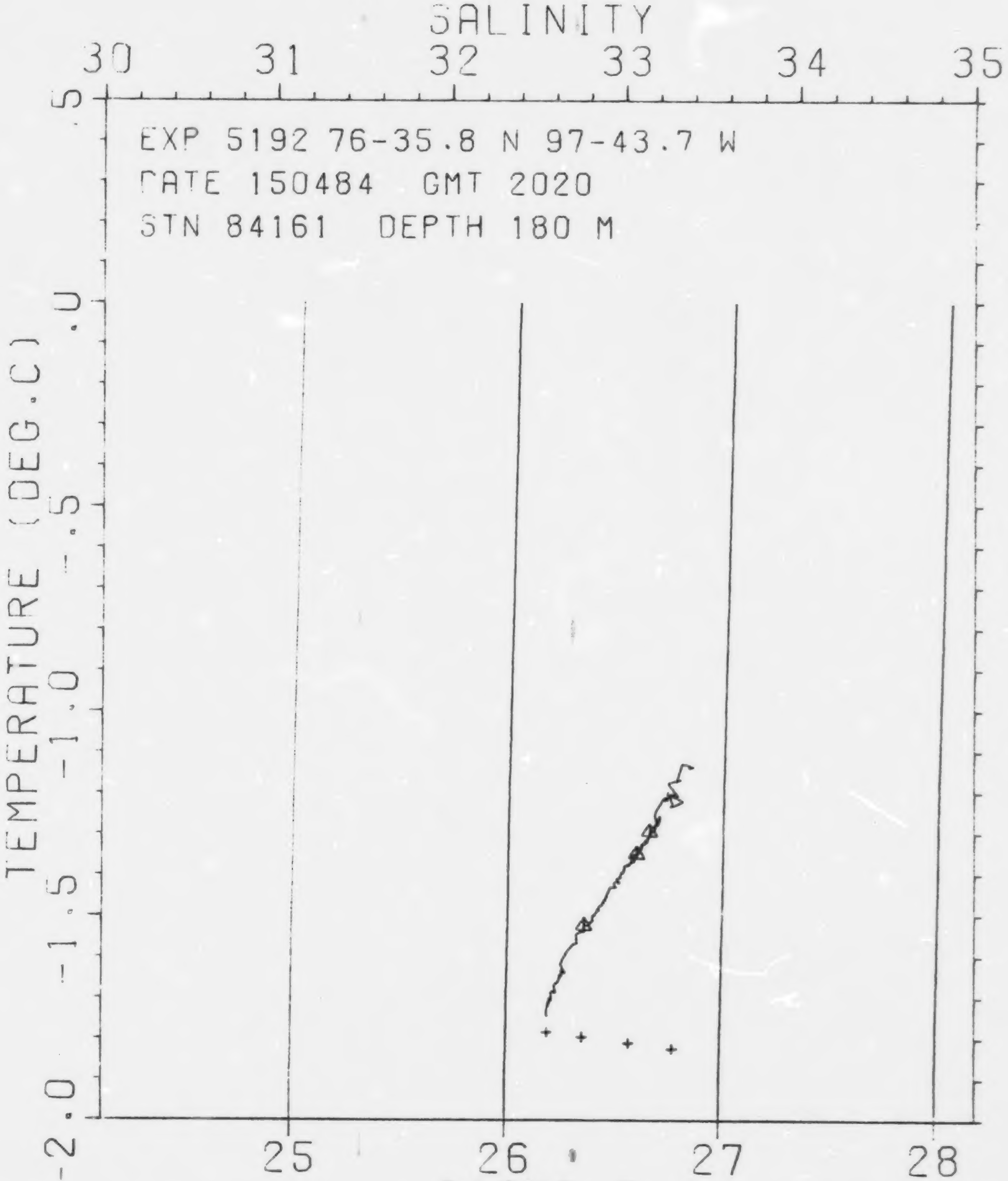
SIGMA-T



EXP 5192
76-35.8 N 97-43.7 W
DATE 150484 GMT 2020
STN 84161 DEPTH 180 M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EXP 5192 76-35.8 N 97-43.7 W
DATE 150484 GMT 2020
STN 84161 DEPTH 180 M
TEMPERATURE (DEG.C)
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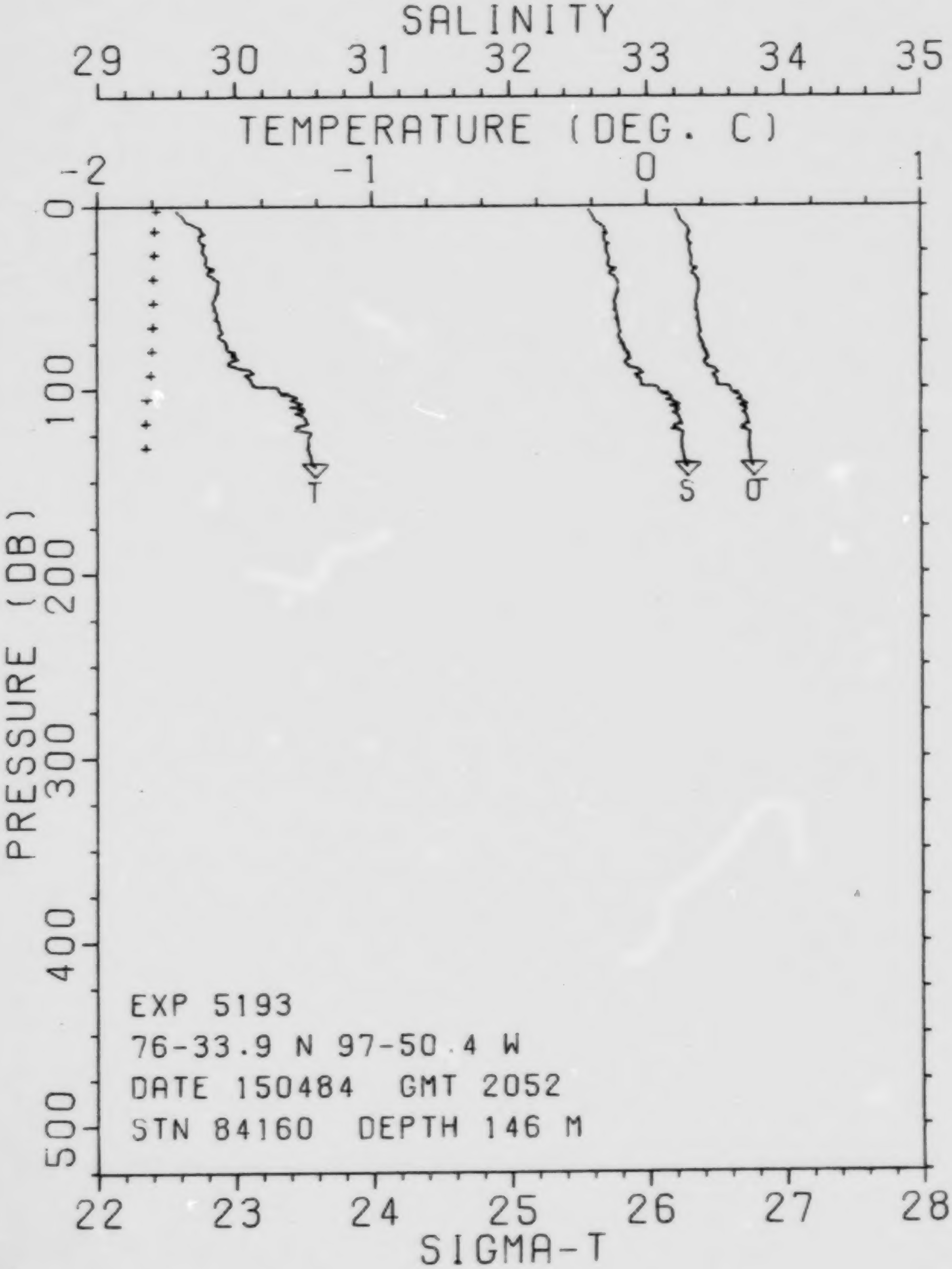
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
-2 -1 0 1
PRESSURE (DB)
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EXP 5193
76-33.9 N 97-50.4 W
DATE 150484 GMT 2052
STN 84160 DEPTH 146 M
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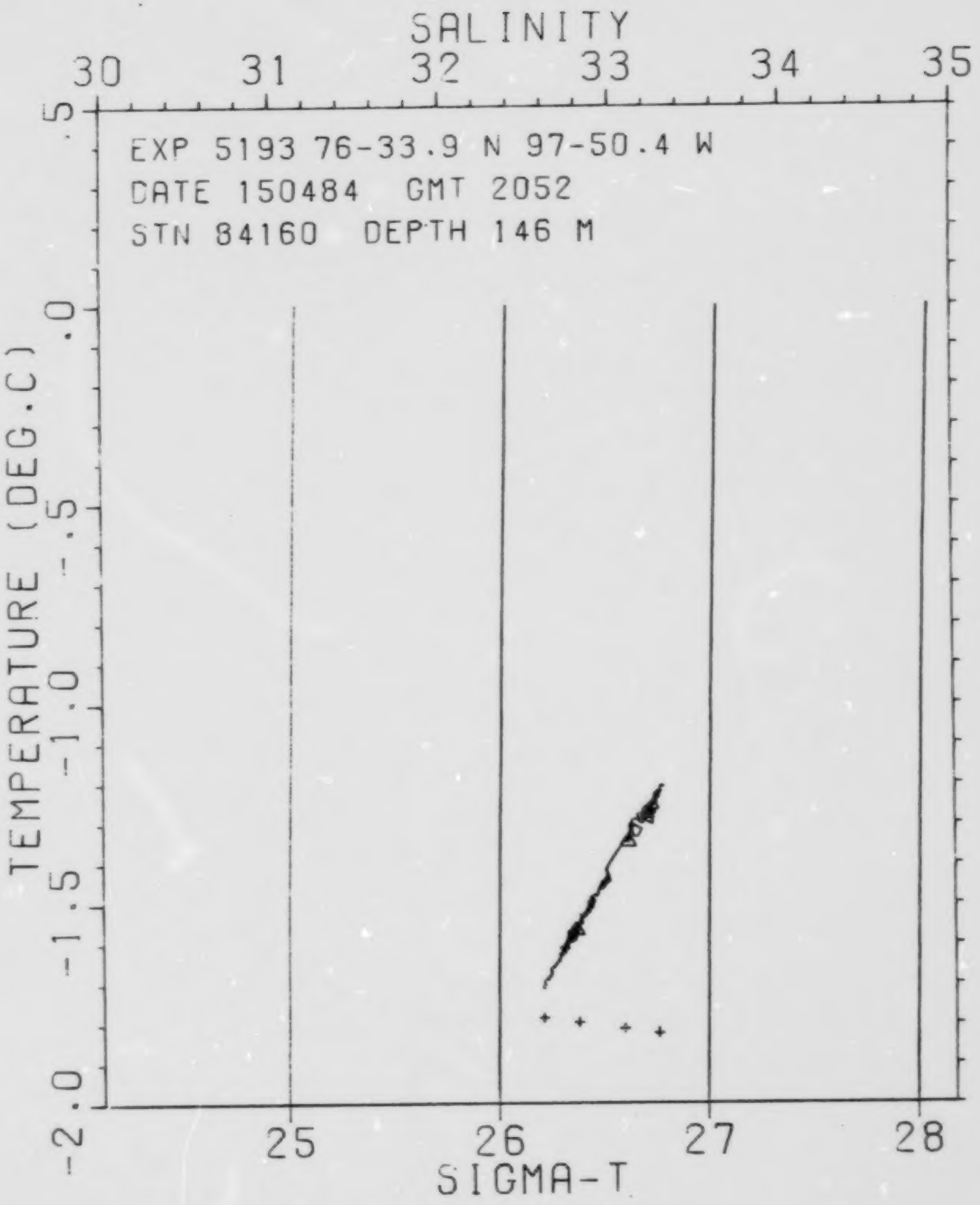
SIGMA-T


SALINITY
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33
34
35
EXP 5193 76-33.9 N 97-50.4 W
DATE 150484 GMT 2052
STN 84160 DEPTH 146 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
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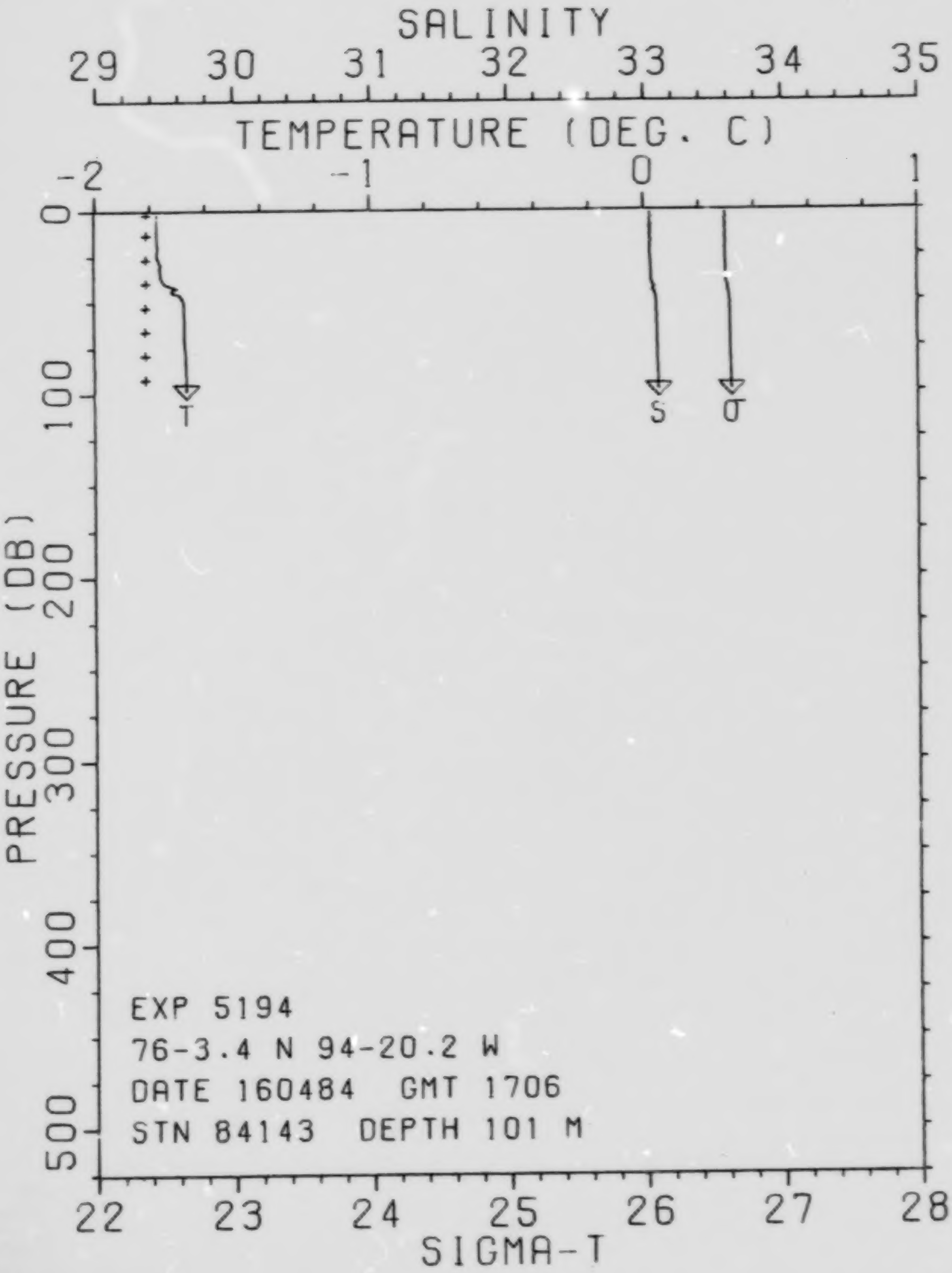
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5194
76-3.4 N 94-20.2 W
DATE 160484 GMT 1706
STN 84143 DEPTH 101 M
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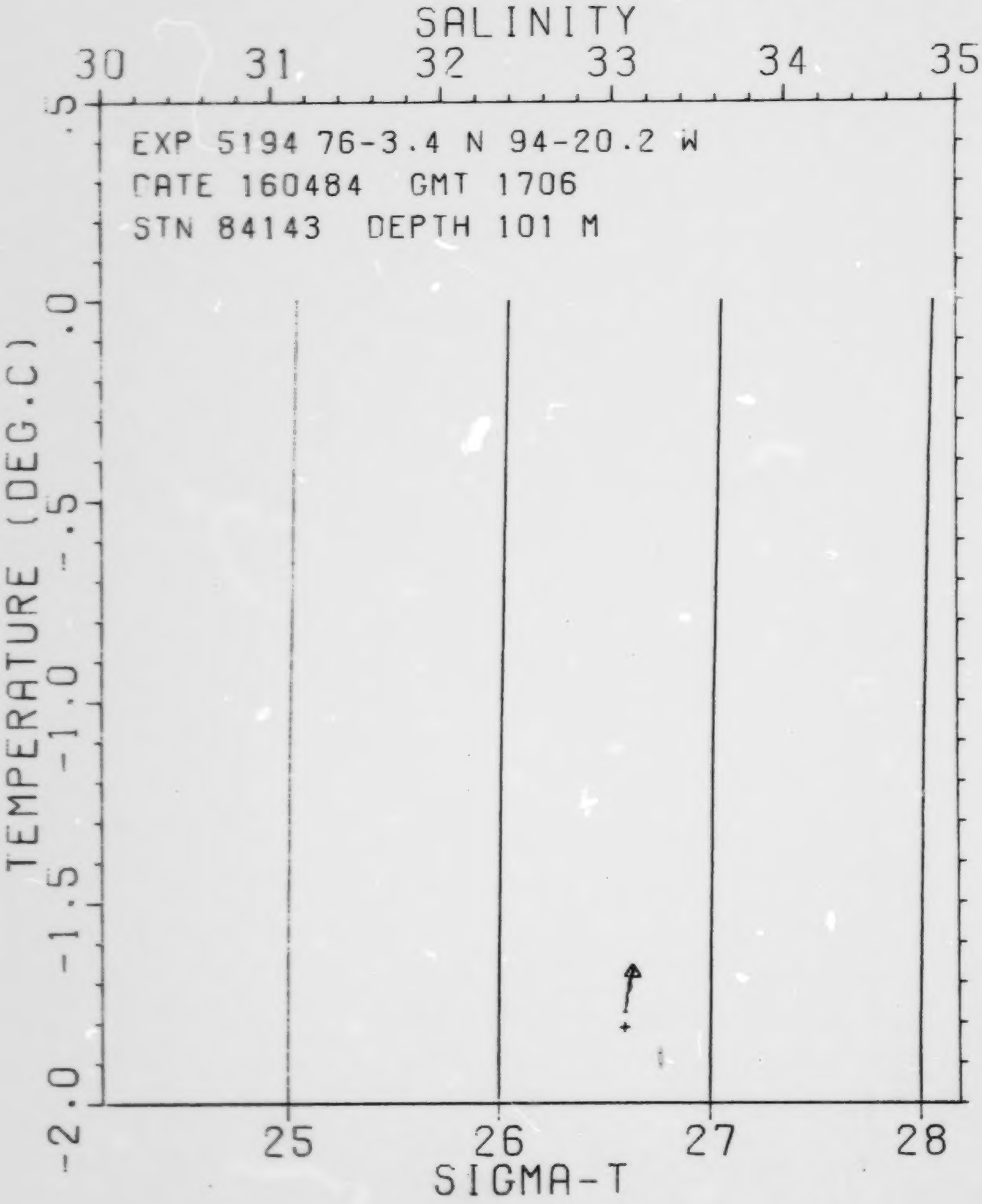
SIGMA-T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EXP 5194 76-3.4 N 94-20.2 W
DATE 160484 GMT 1706
STN 84143 DEPTH 101 M
TEMPERATURE (DEG.C)
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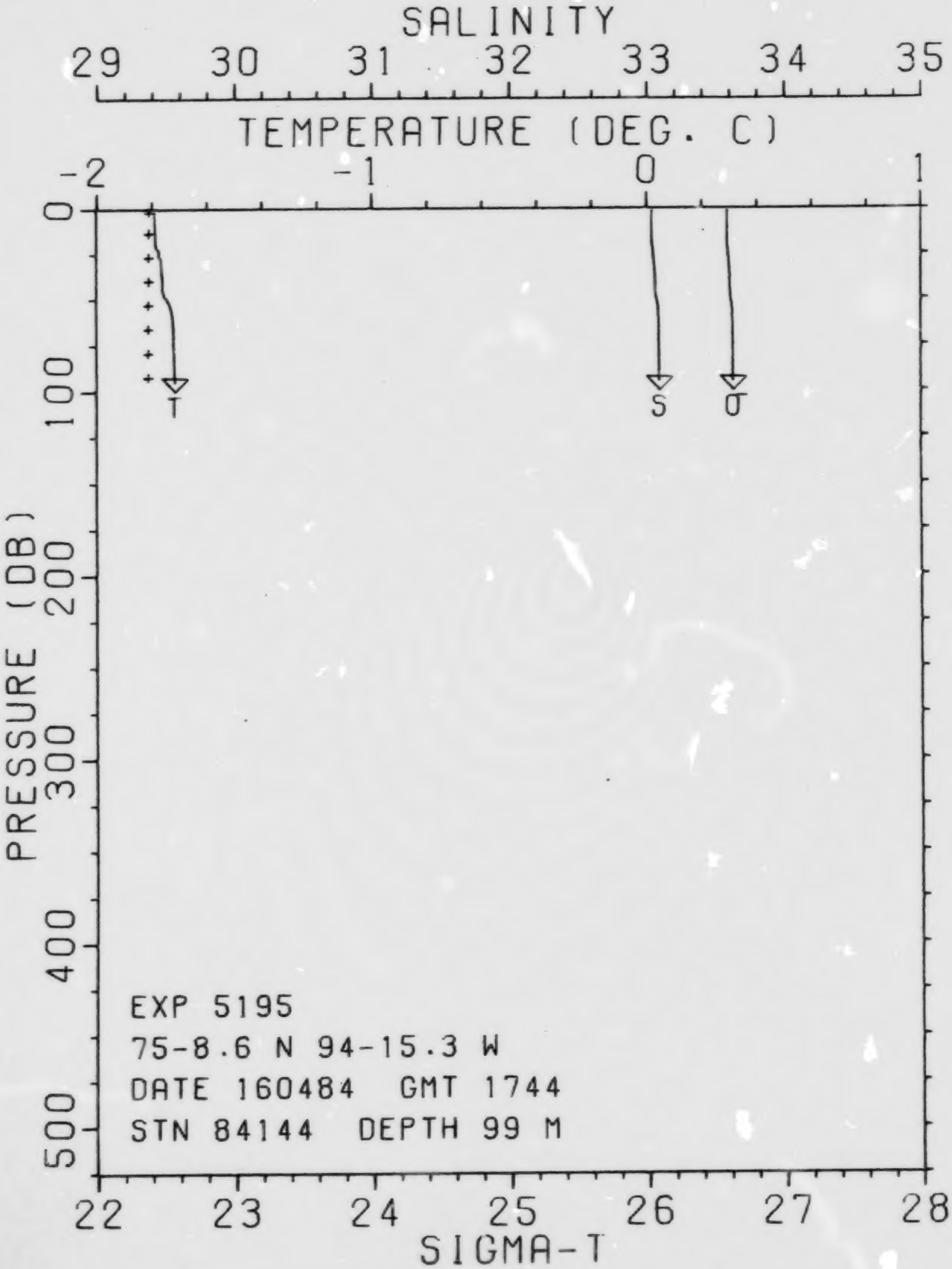
SIGMA-T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TEMPERATURE (DEG. C)
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500
PRESSURE (DB)
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EXP 5195
75-8.6 N 94-15.3 W
DATE 160484 GMT 1744
STN 84144 DEPTH 99 M
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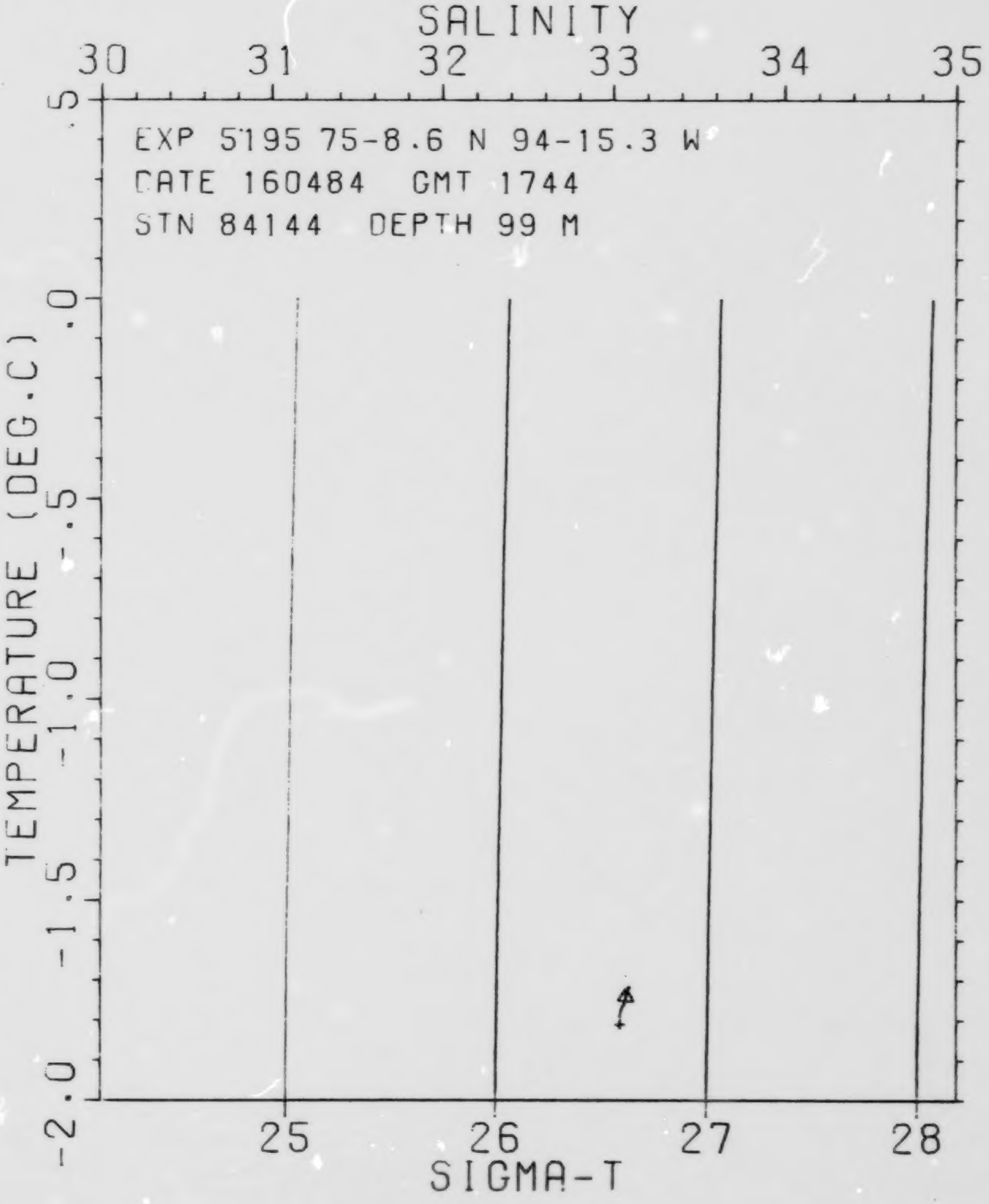
SIGMA-T


SALINITY
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EXP 5195 75-8.6 N 94-15.3 W
DATE 160484 GMT 1744
STN 84144 DEPTH 99 M
TEMPERATURE (DEG.C)
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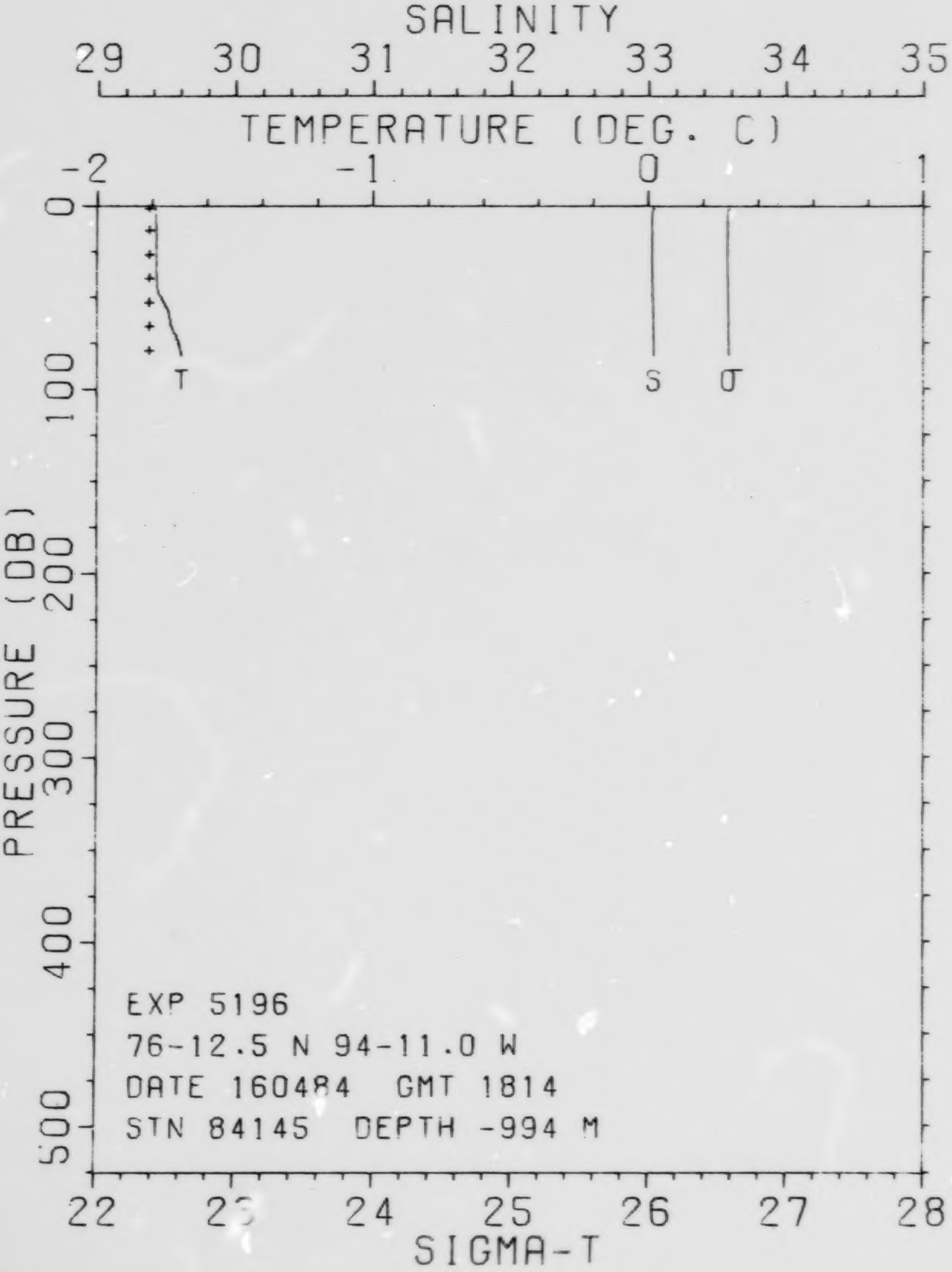
SIGMA-T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TEMPERATURE (DEG. C)
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-1
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PRESSURE (DB)
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EXP 5196
76-12.5 N 94-11.0 W
DATE 160484 GMT 1814
STN 84145 DEPTH -994 M
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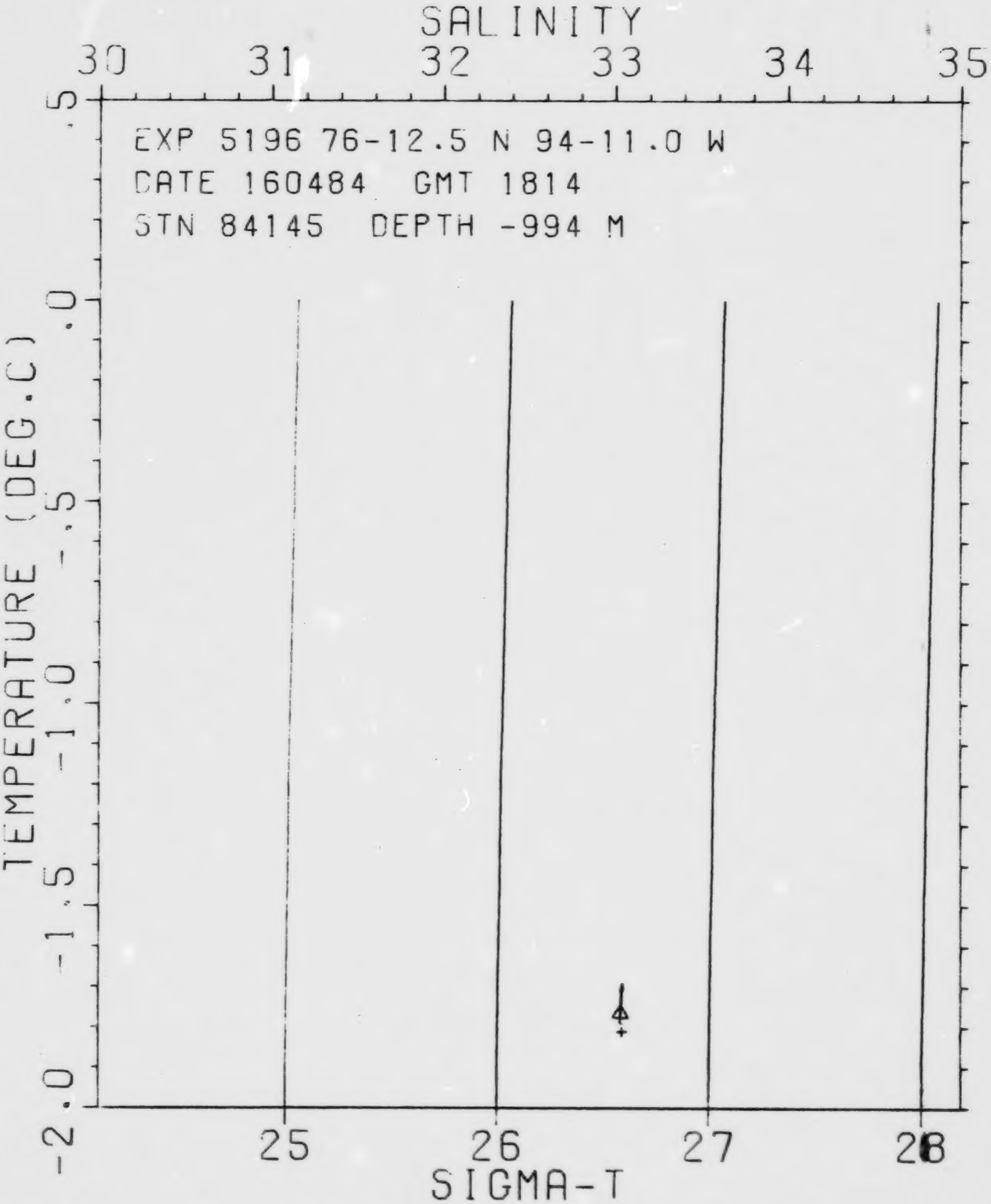
SIGMA-T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EXP 5196 76-12.5 N 94-11.0 W
DATE 160484 GMT 1814
STN 84145 DEPTH -994 M
TEMPERATURE (DEG.C)
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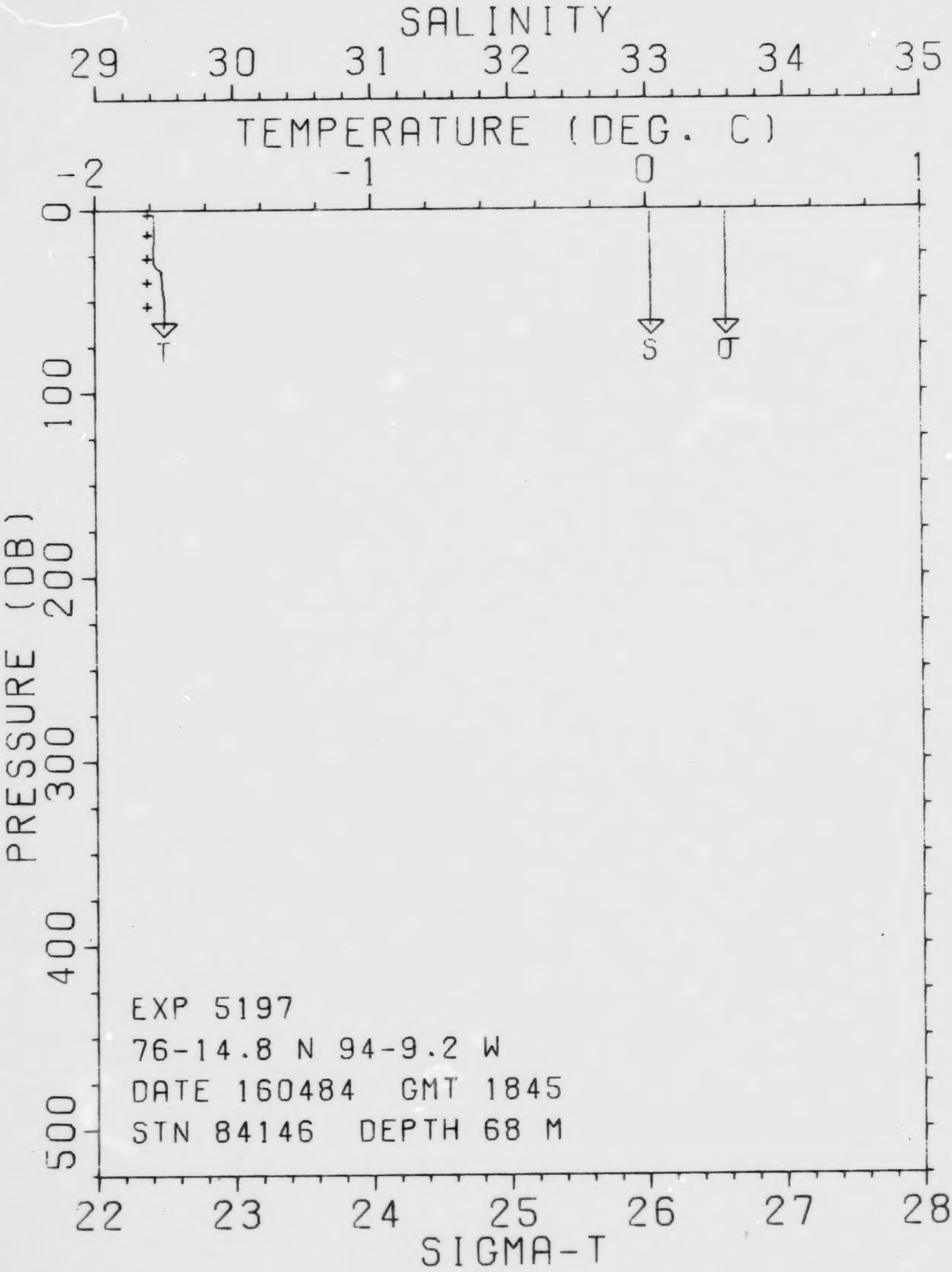
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5197
76-14.8 N 94-9.2 W
DATE 160484 GMT 1845
STN 84146 DEPTH 68 M
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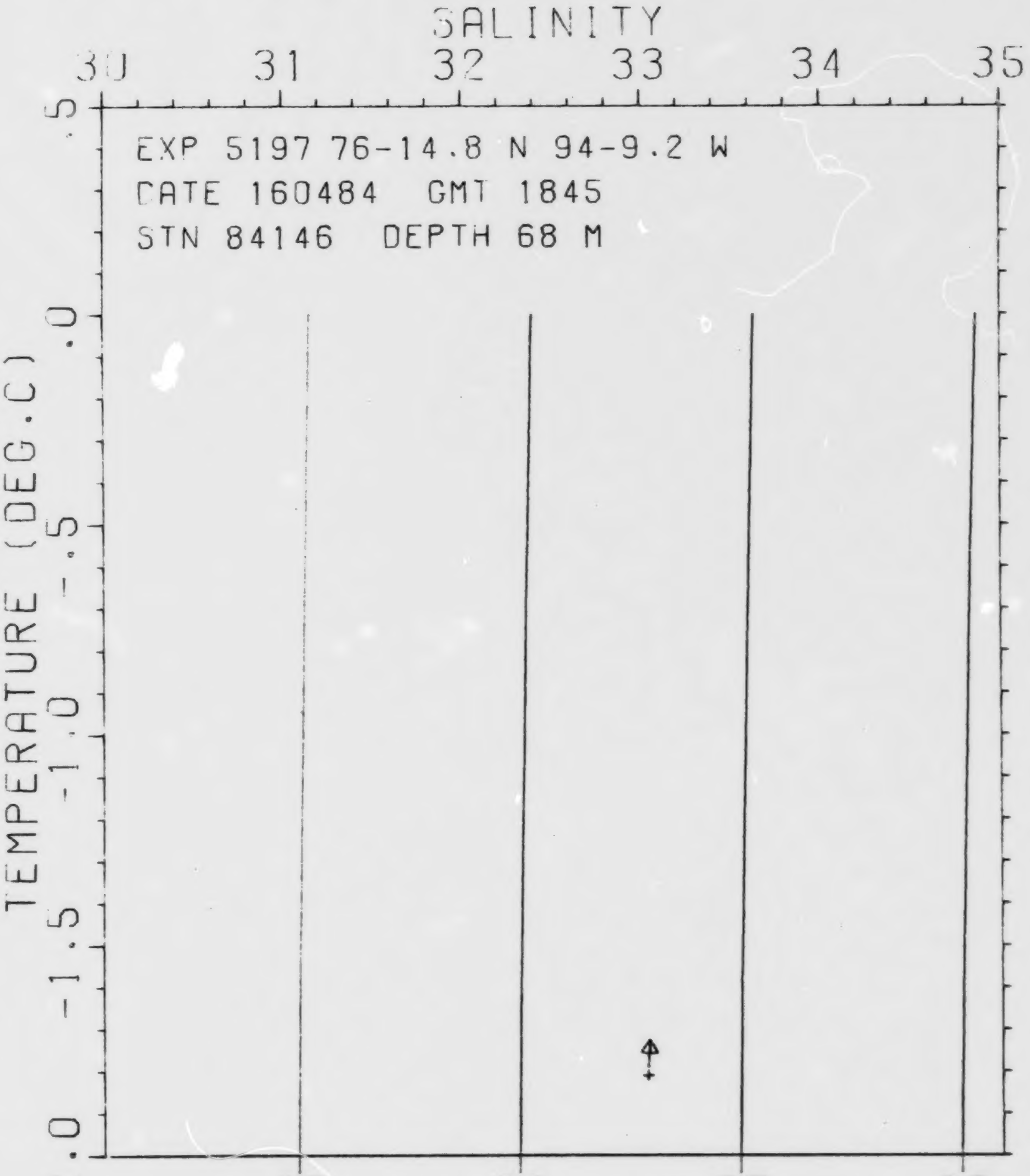
SIGMA-T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DATE 160484 GMT 1845
STN 84146 DEPTH 68 M
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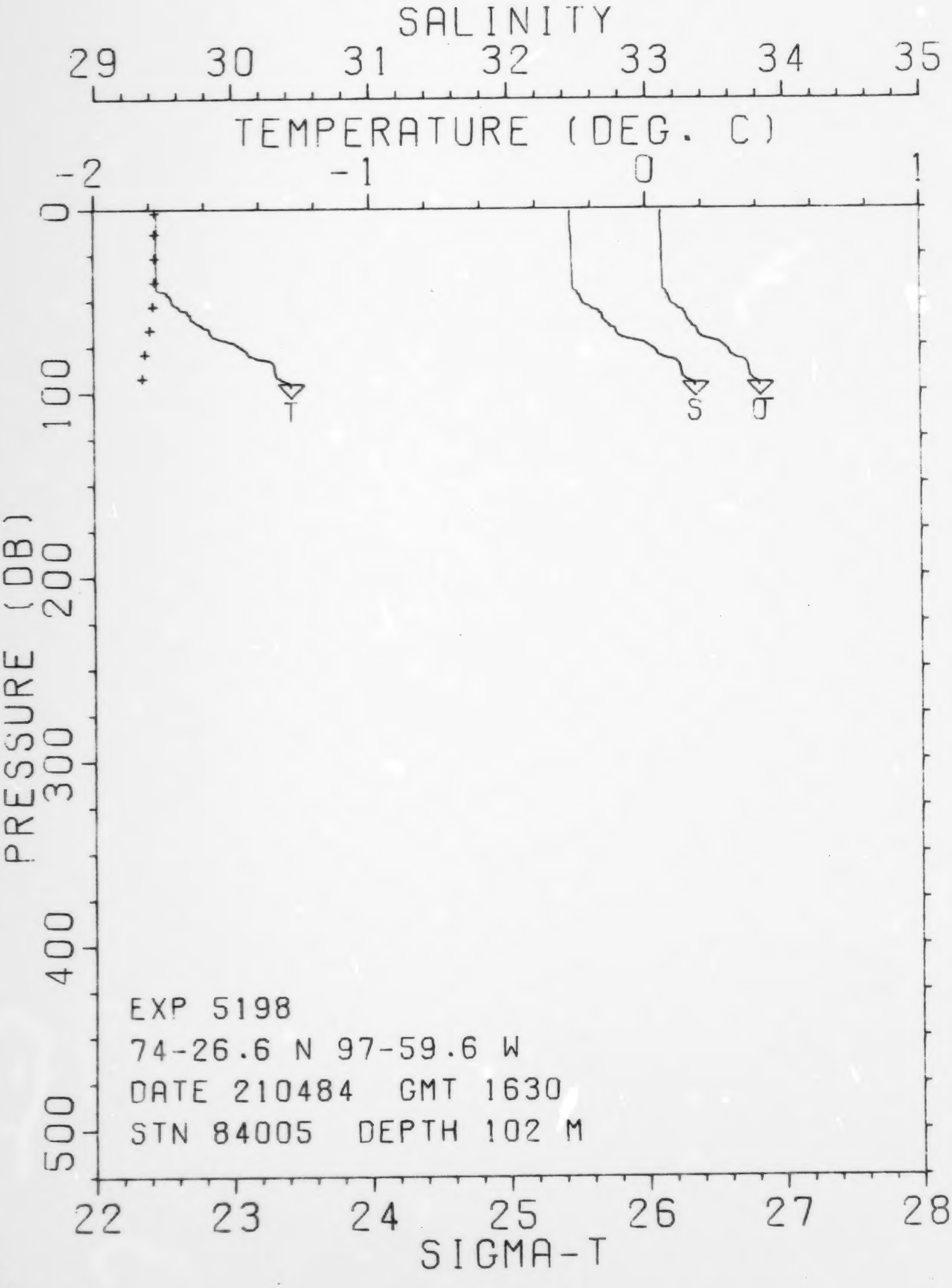
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5198
74-26.6 N 97-59.6 W
DATE 210484 GMT 1630
STN 84005 DEPTH 102 M
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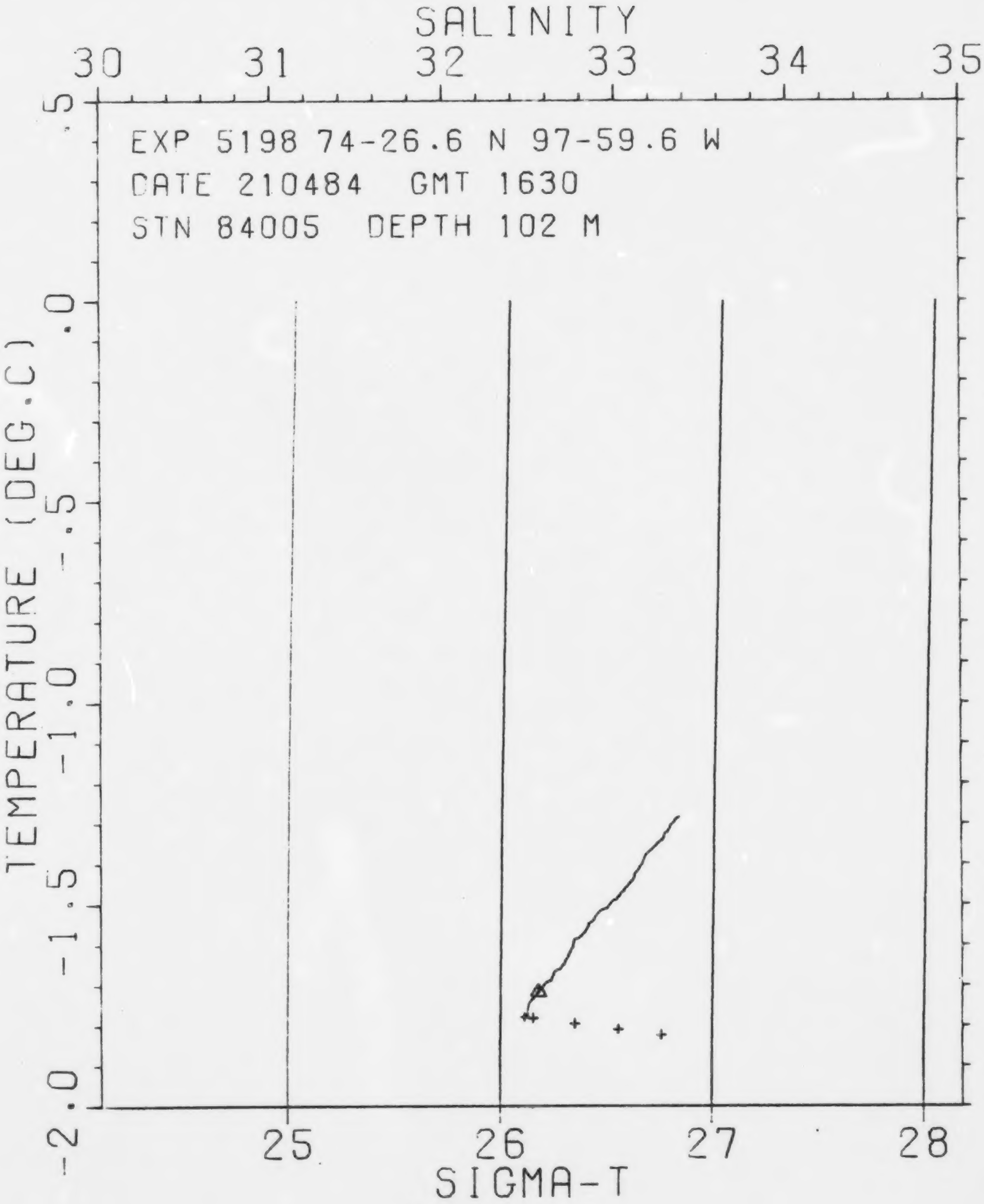
SIGMA-T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EXP 5198 74-26.6 N 97-59.6 W
DATE 210484 GMT 1630
STN 84005 DEPTH 102 M
TEMPERATURE (DEG.C)
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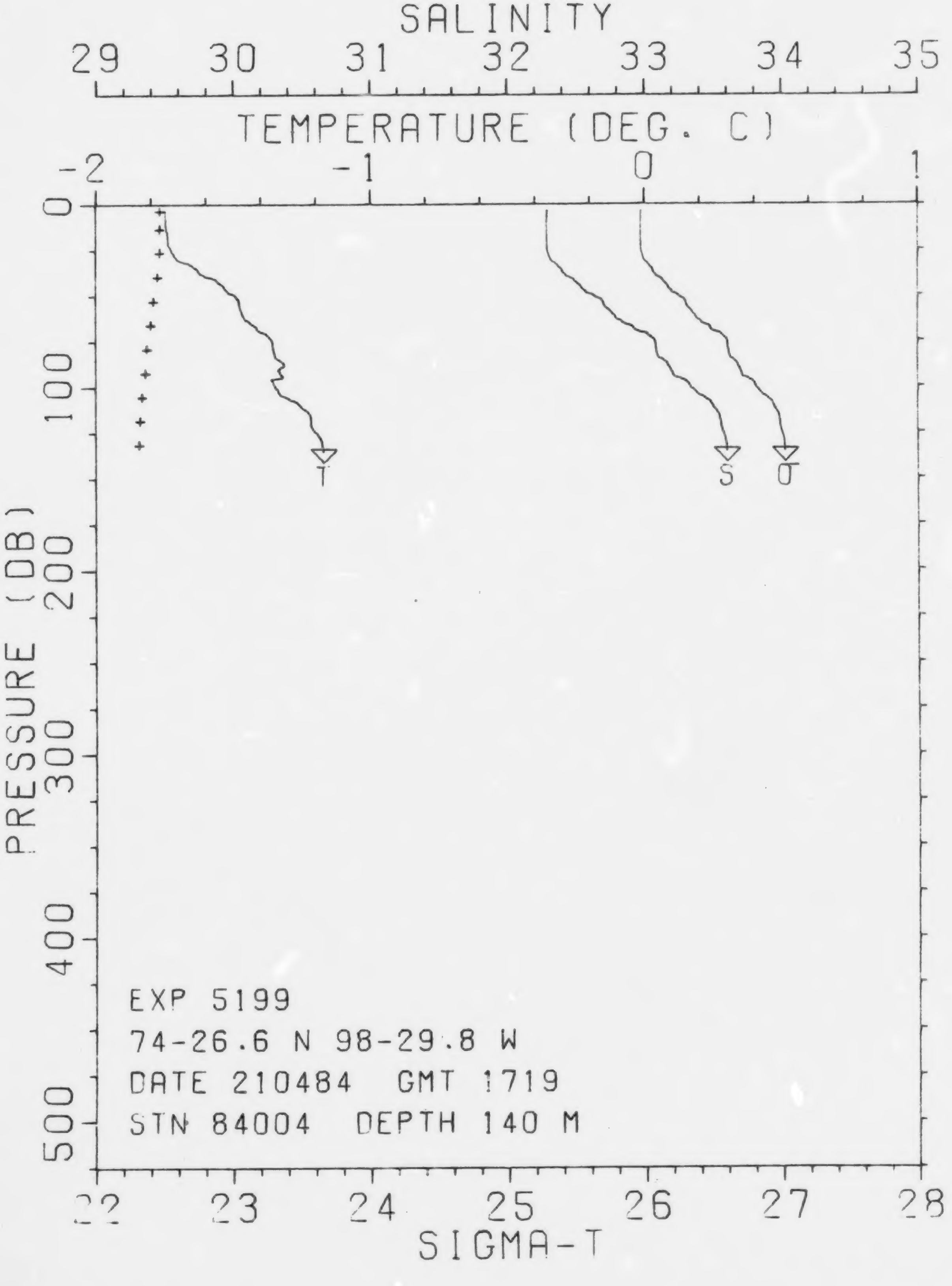
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5199
74-26.6 N 98-29.8 W
DATE 210484 GMT 1719
STN 84004 DEPTH 140 M
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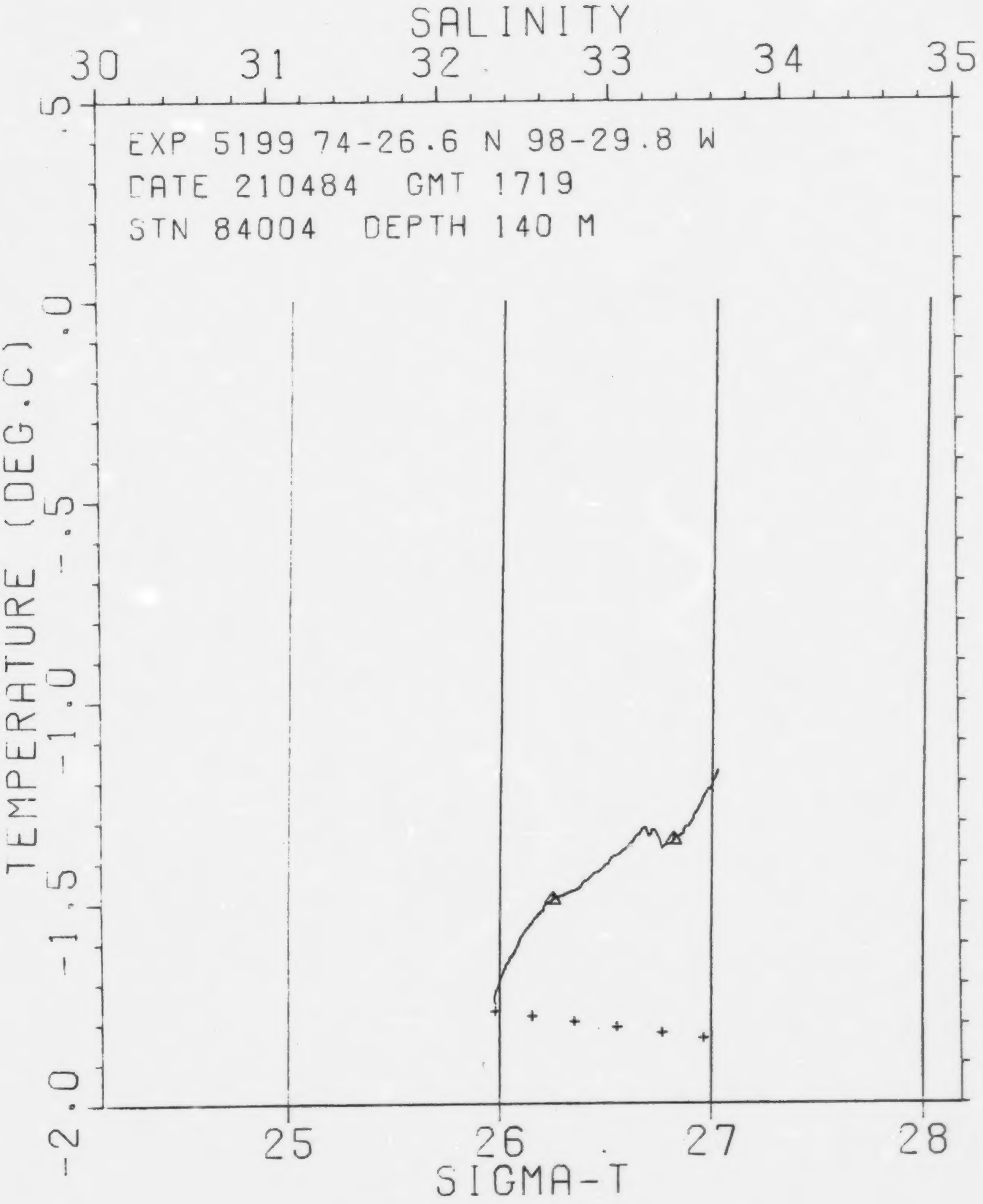
SIGMA-T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TEMPERATURE (DEG.C)
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DATE 210484 GMT 1719
STN 84004 DEPTH 140 M
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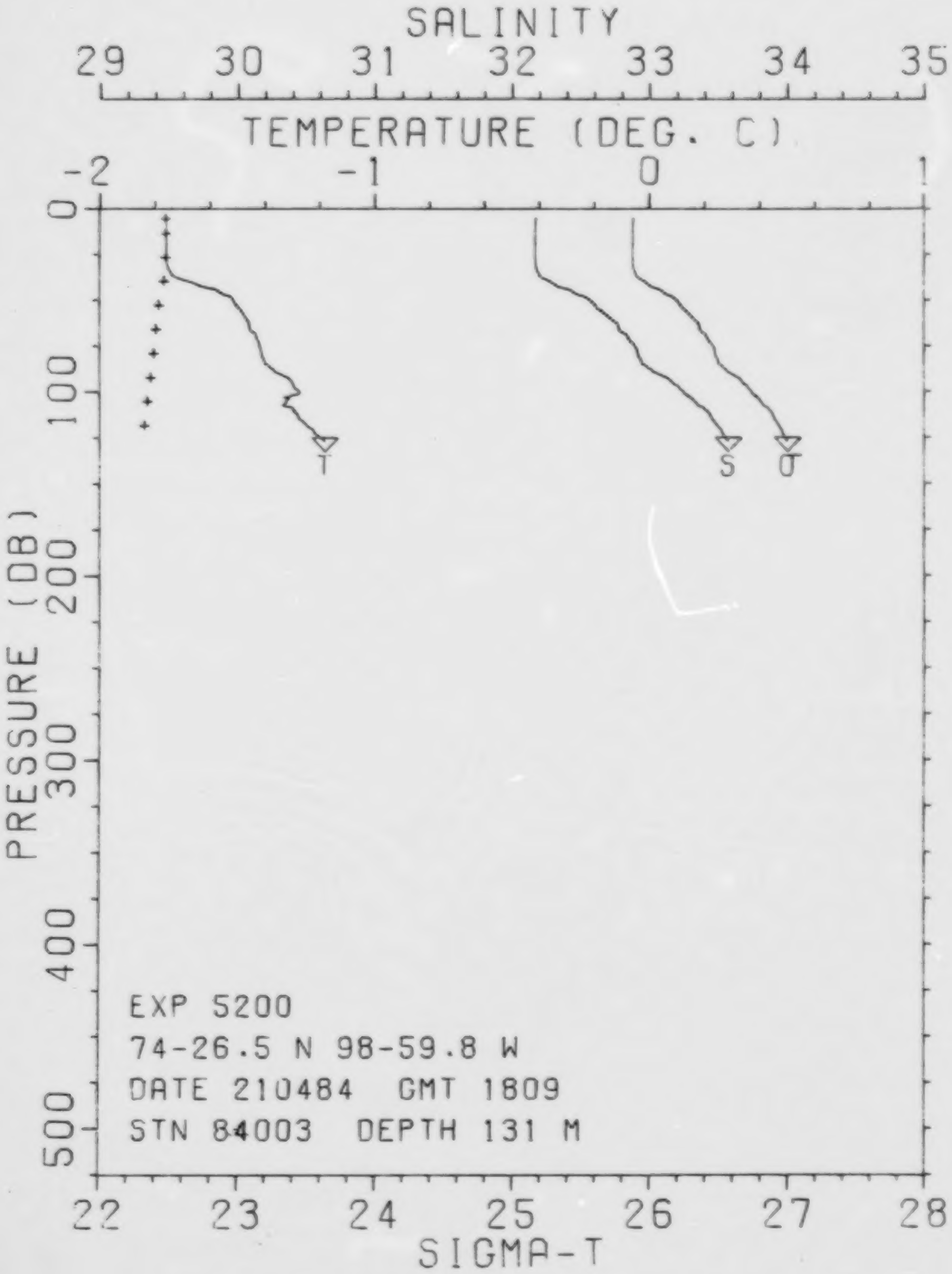
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
-2 -1 0 1
PRESSURE (DB)
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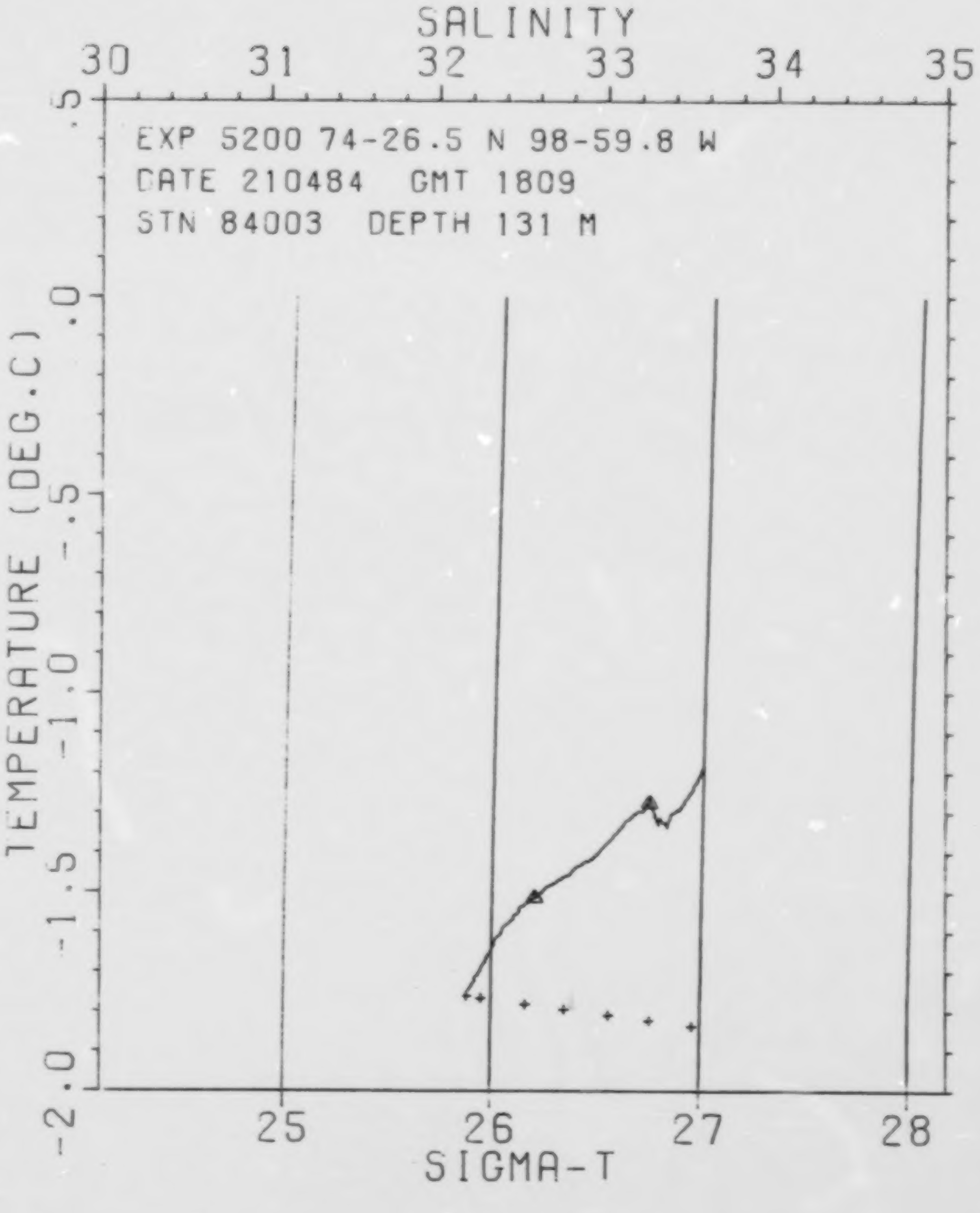
EXP 5200
74-26.5 N 98-59.8 W
DATE 210484 GMT 1809
STN 84003 DEPTH 131 M
22 23 24 25 26 27 28
SIGMA-T


SALINITY
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EXP 5200 74-26.5 N 98-59.8 W
DATE 210484 GMT 1809
STN 84003 DEPTH 131 M
TEMPERATURE (DEG.C)
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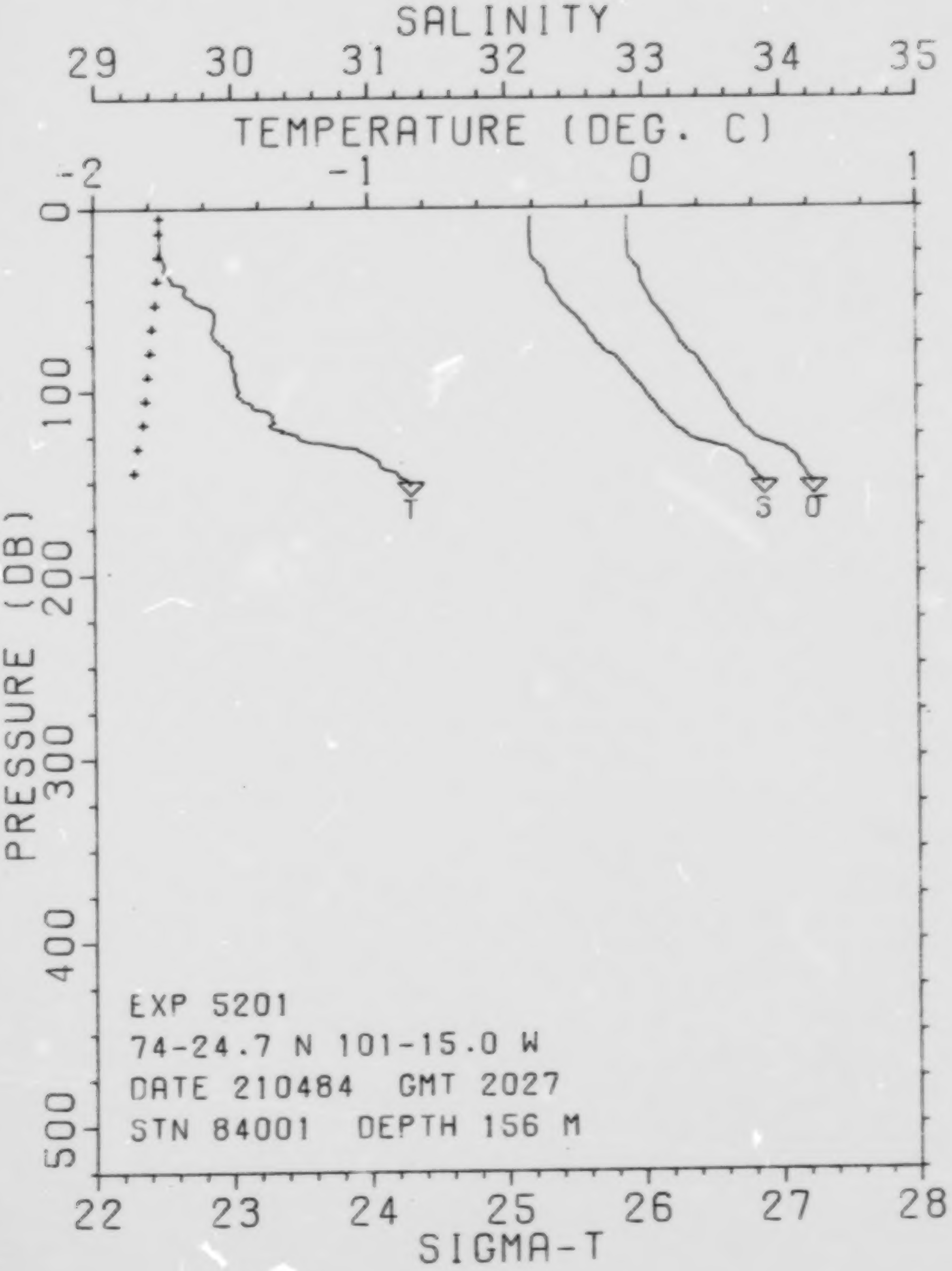
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5201
74-24.7 N 101-15.0 W
DATE 210484 GMT 2027
STN 84001 DEPTH 156 M
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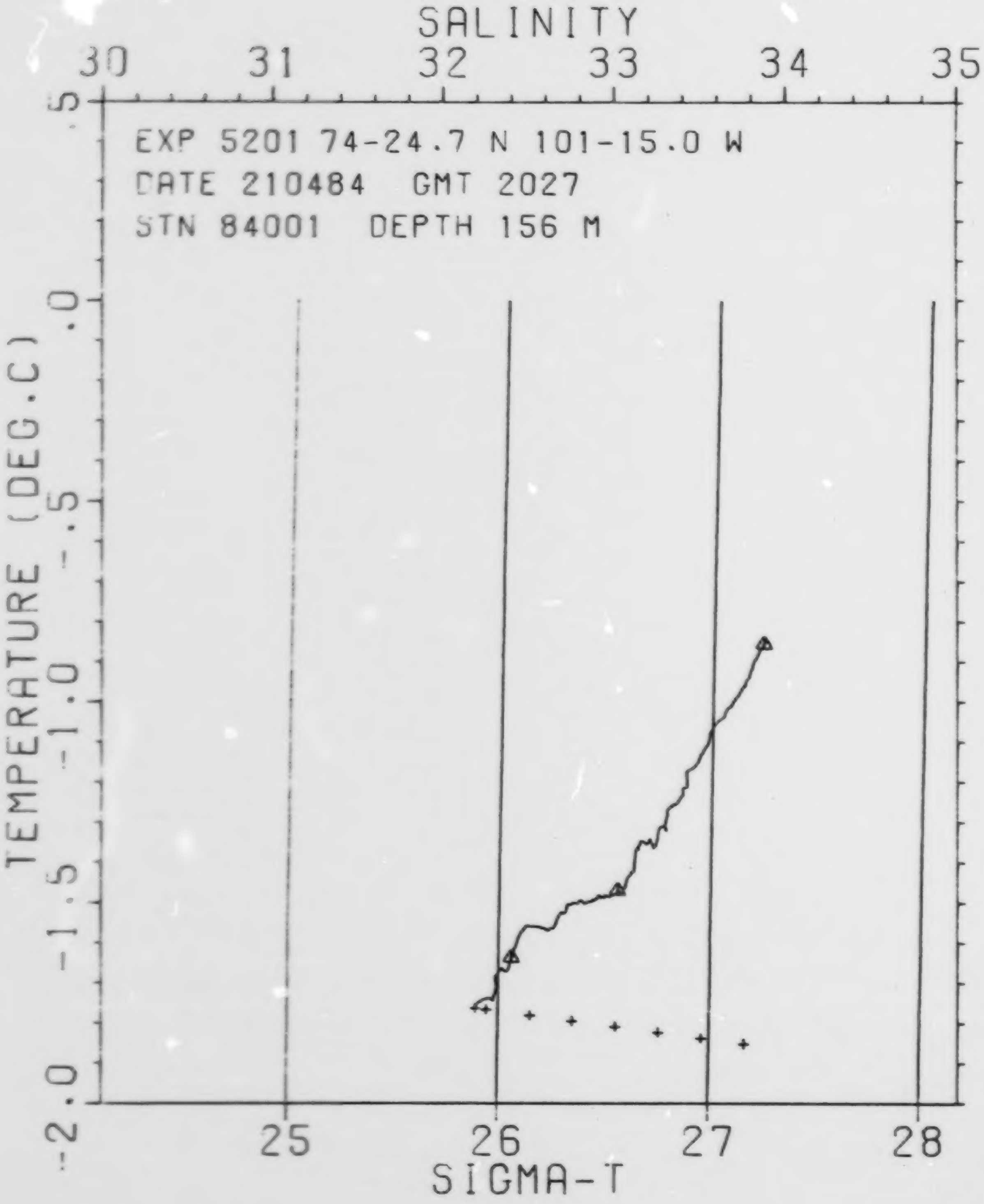
SIGMA-T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EXP 5201 74-24.7 N 101-15.0 W
DATE 210484 GMT 2027
STN 84001 DEPTH 156 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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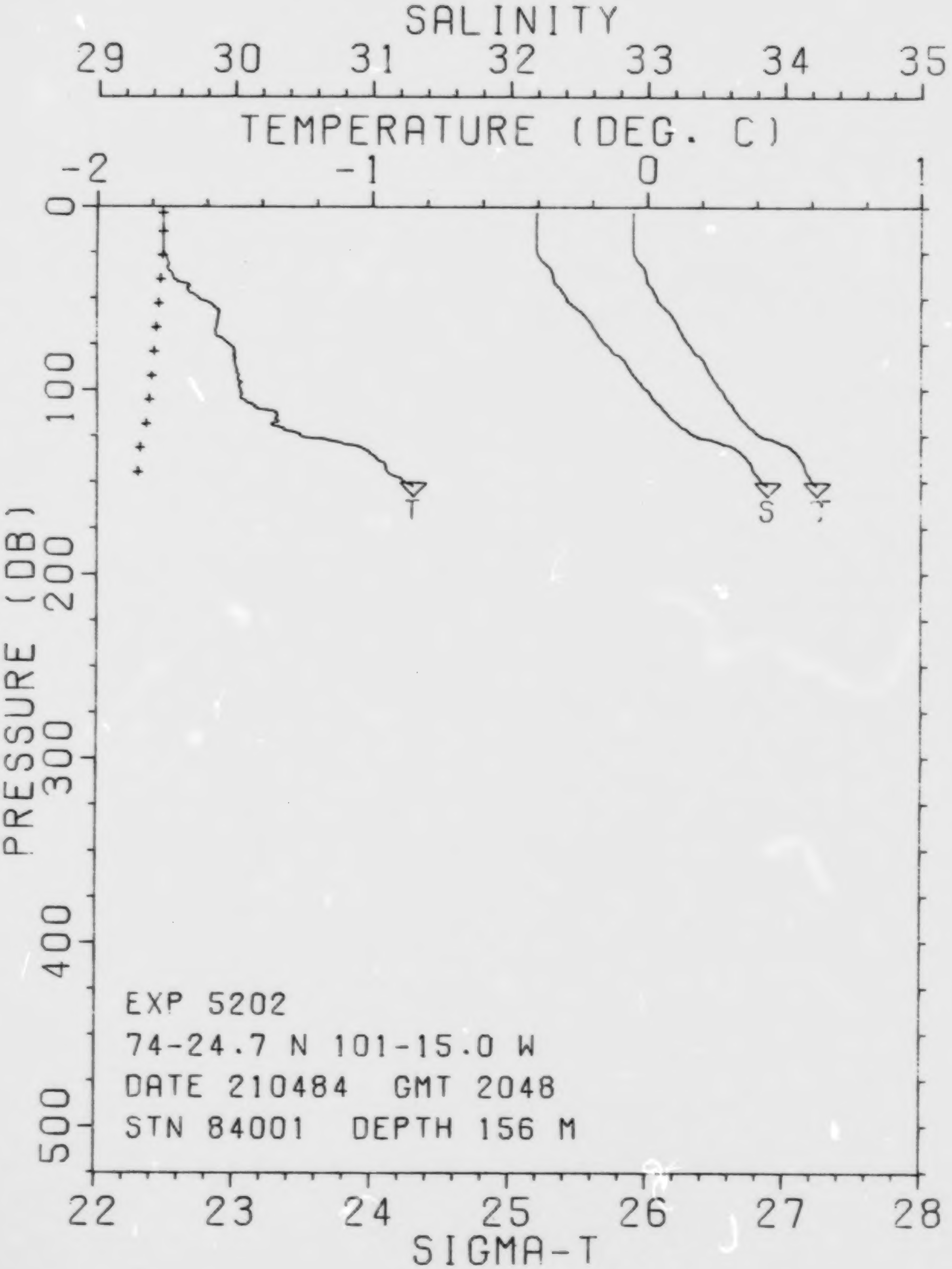
SIGMA-T


SALINITY
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TEMPERATURE (DEG. C)
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-1
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PRESSURE (DB)
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EXP 5202
74-24.7 N 101-15.0 W
DATE 210484 GMT 2048
STN 84001 DEPTH 156 M
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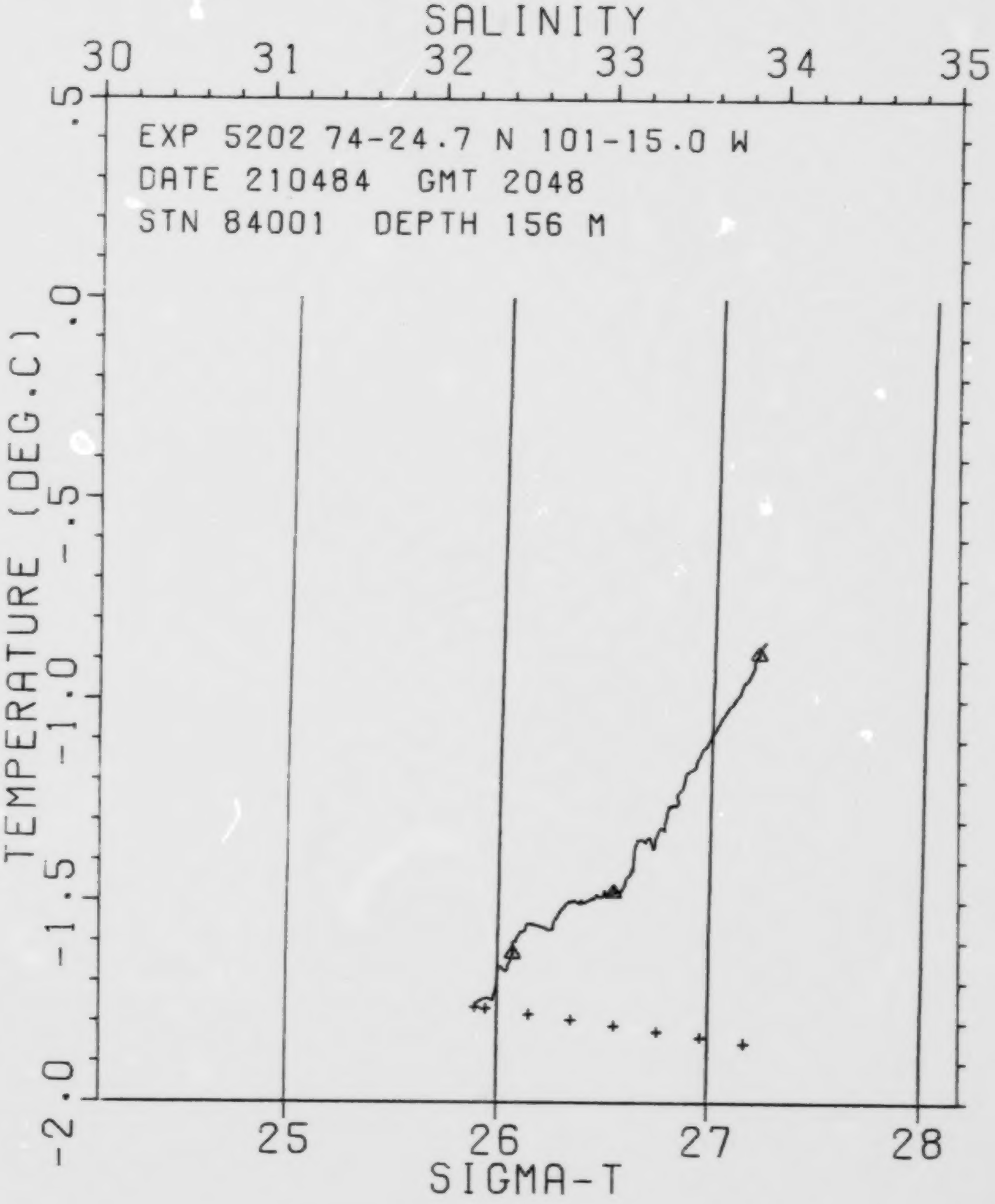
SIGMA-T


SALINITY
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EXP 5202 74-24.7 N 101-15.0 W
DATE 210484 GMT 2048
STN 84001 DEPTH 156 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
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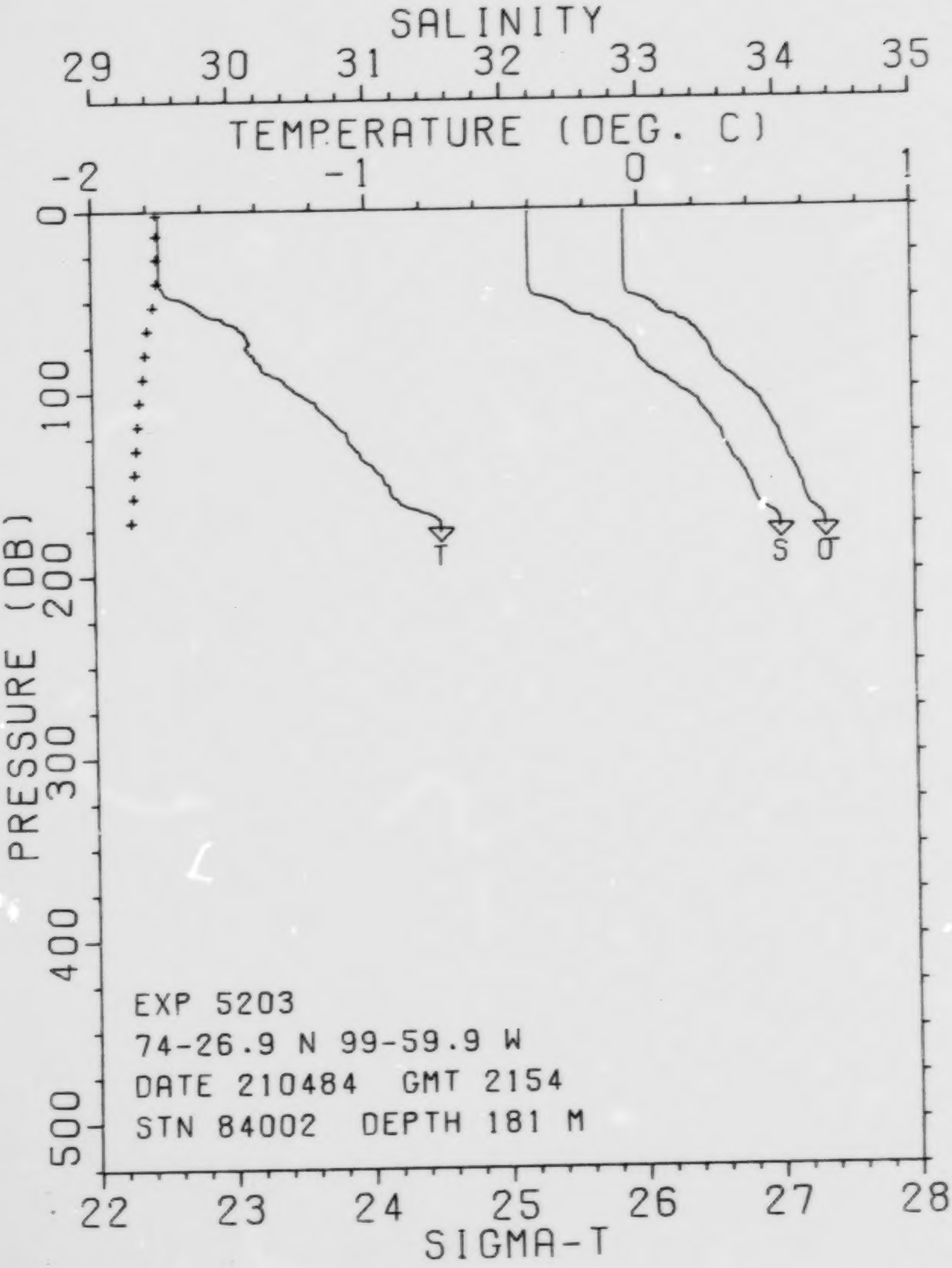
28
SIGMA-T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TEMPERATURE (DEG. C)
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1
PRESSURE (DB)
0
100
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EXP 5203
74-26.9 N 99-59.9 W
DATE 210484 GMT 2154
STN 84002 DEPTH 181 M
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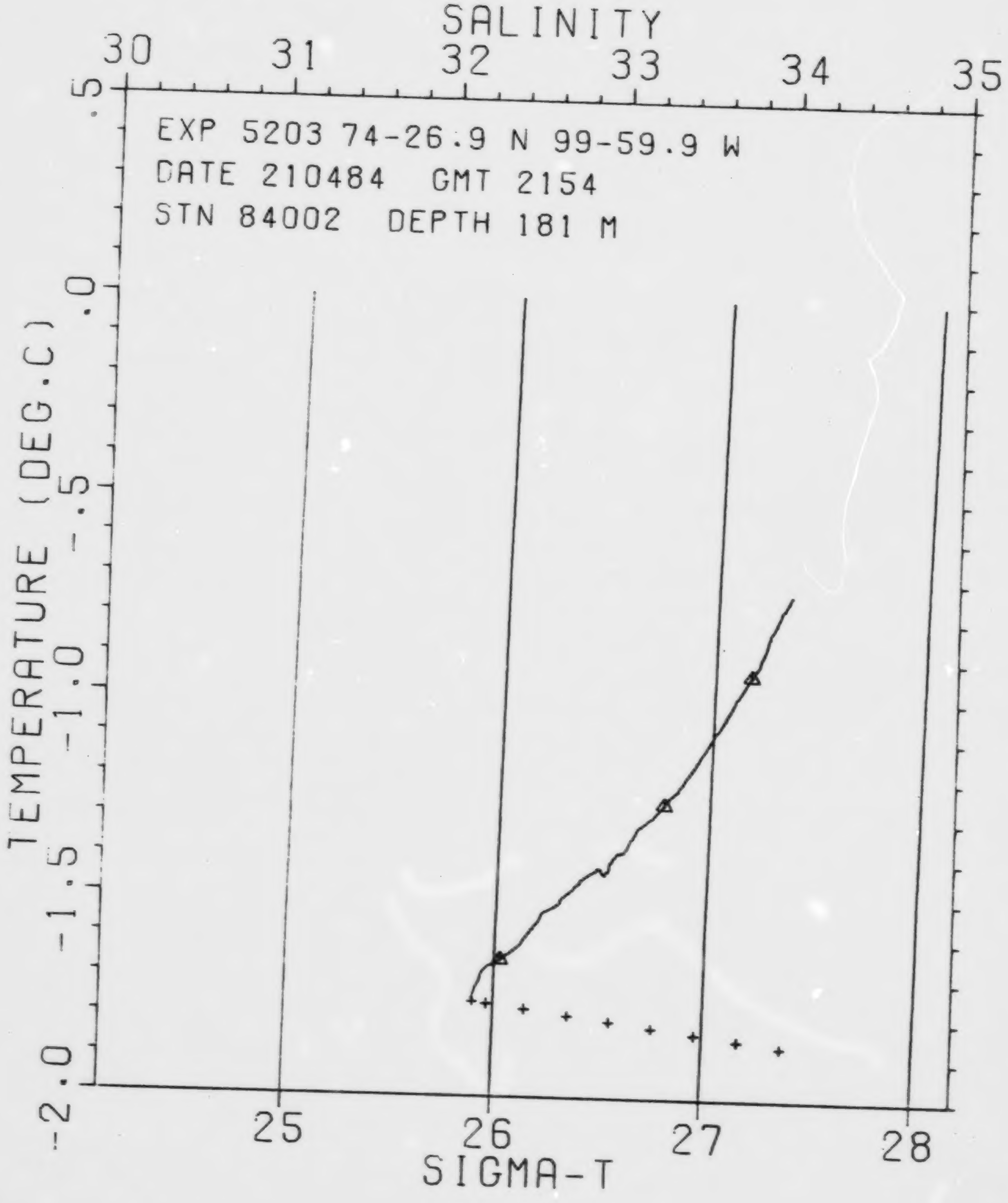
SIGMA-T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EXP 5203 74-26.9 N 99-59.9 W
DATE 210484 GMT 2154
STN 84002 DEPTH 181 M
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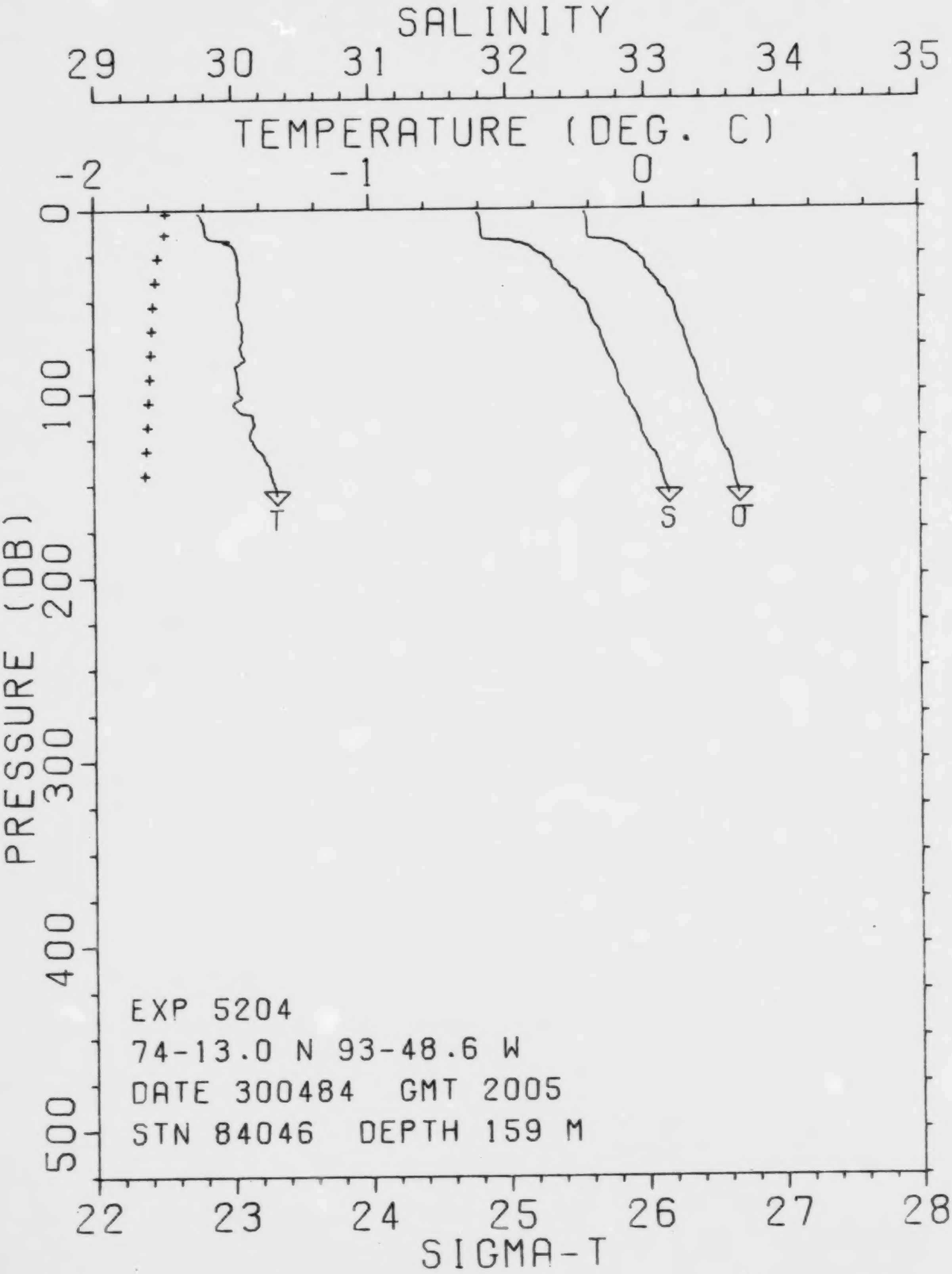
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5204
74-13.0 N 93-48.6 W
DATE 300484 GMT 2005
STN 84046 DEPTH 159 M
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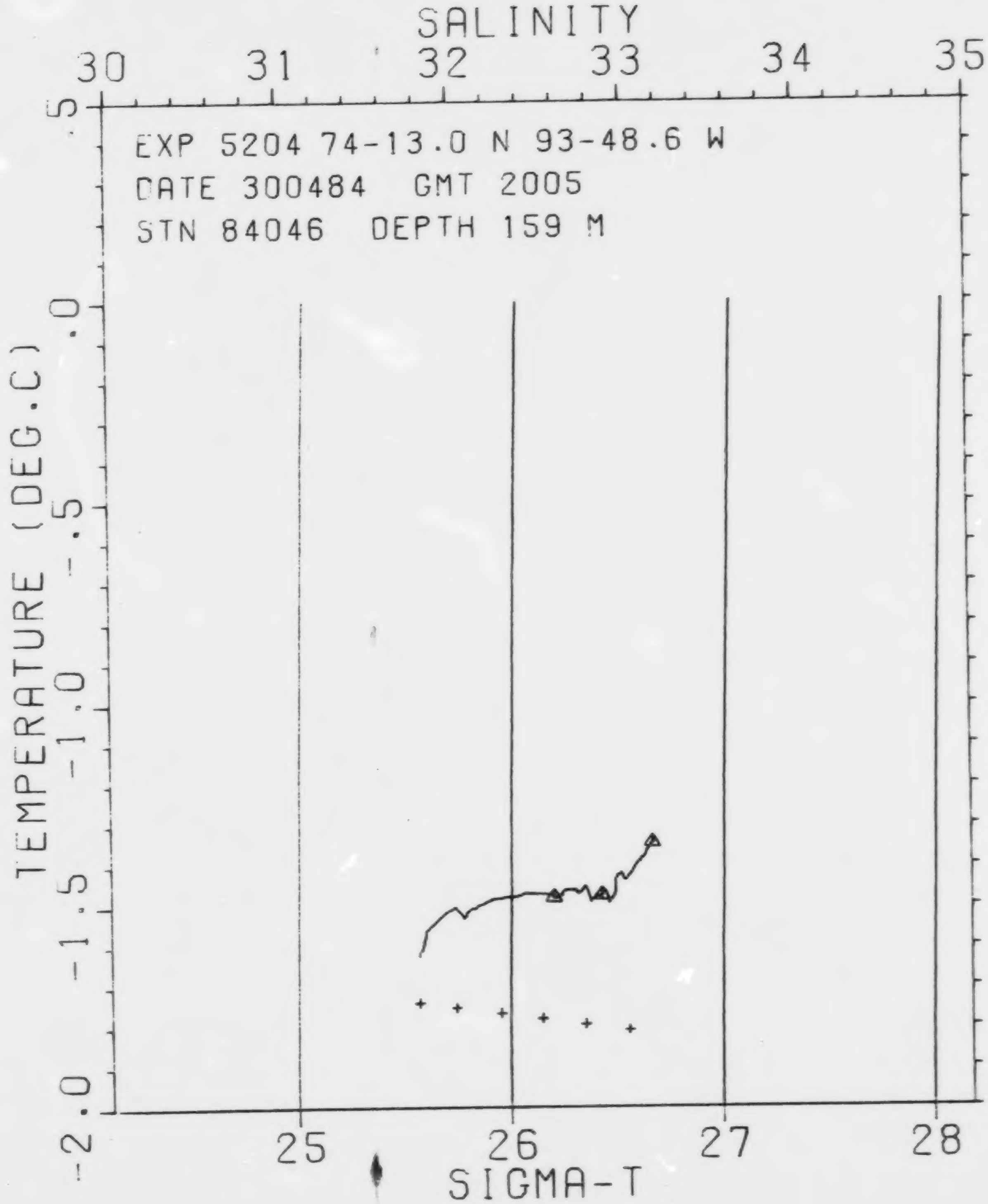
SIGMA-T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DATE 300484 GMT 2005
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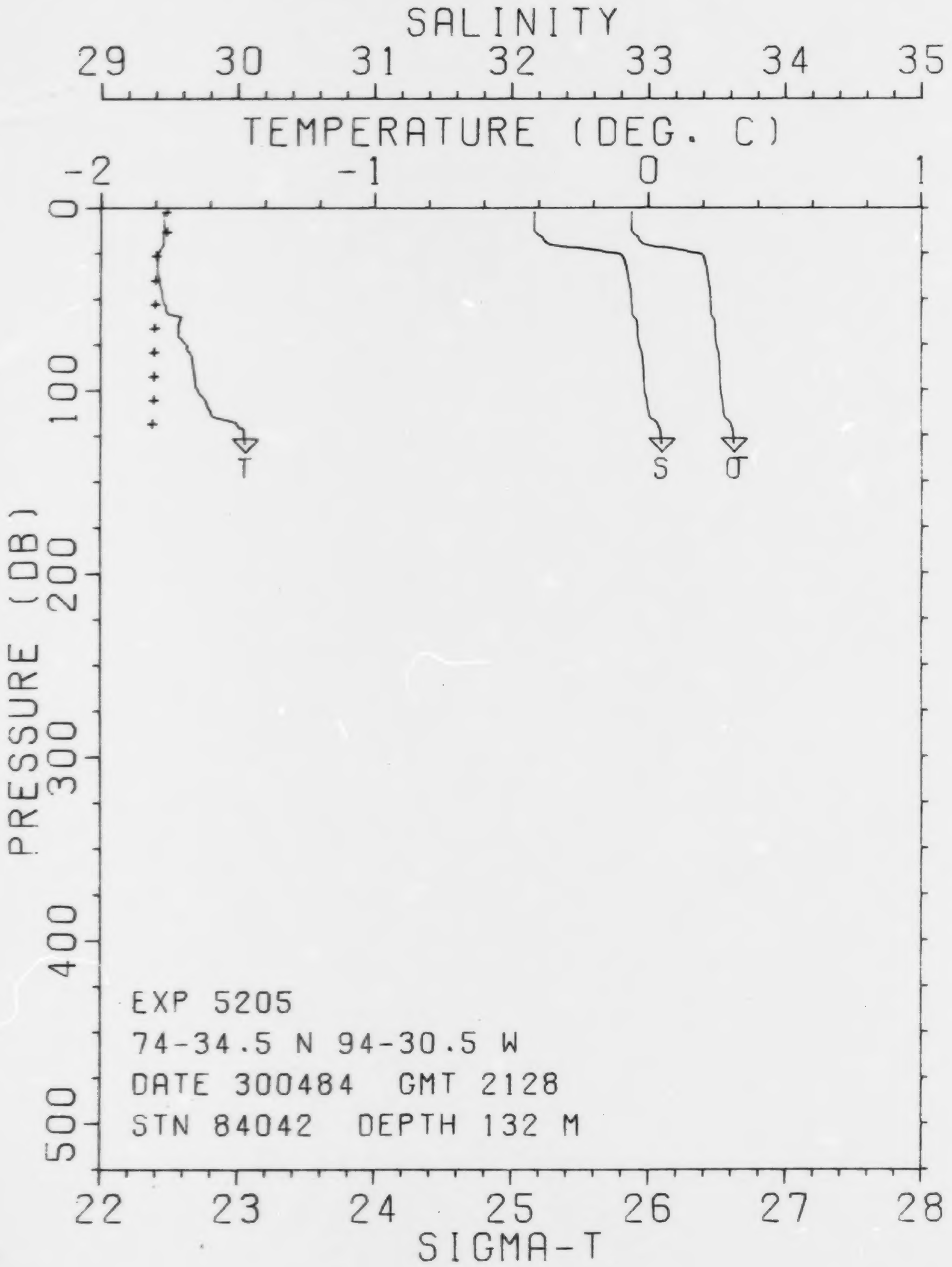
SIGMA-T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PRESSURE (DB)
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EXP 5205
74-34.5 N 94-30.5 W
DATE 300484 GMT 2128
STN 84042 DEPTH 132 M
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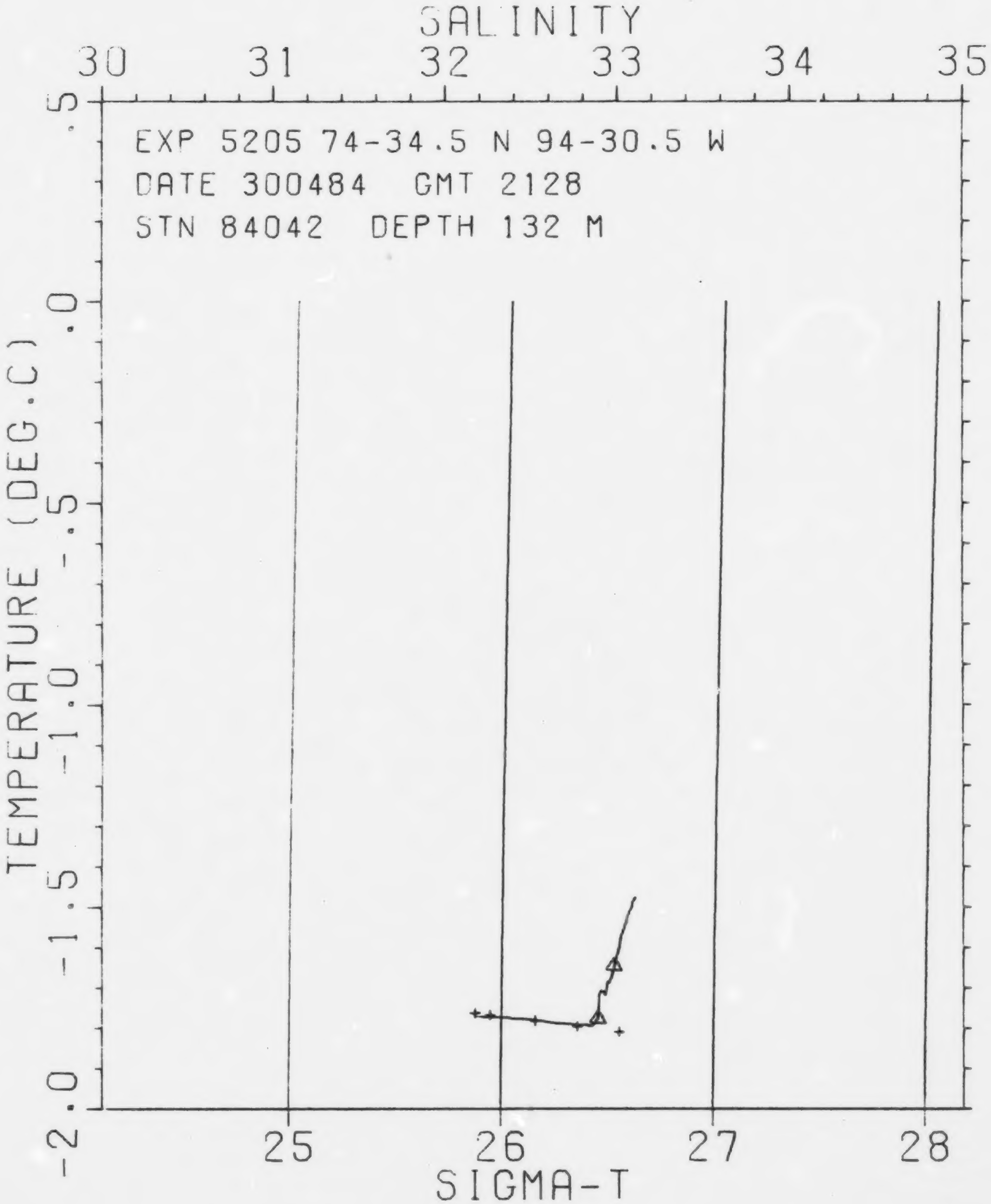
SIGMA-T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STN 84042 DEPTH 132 M
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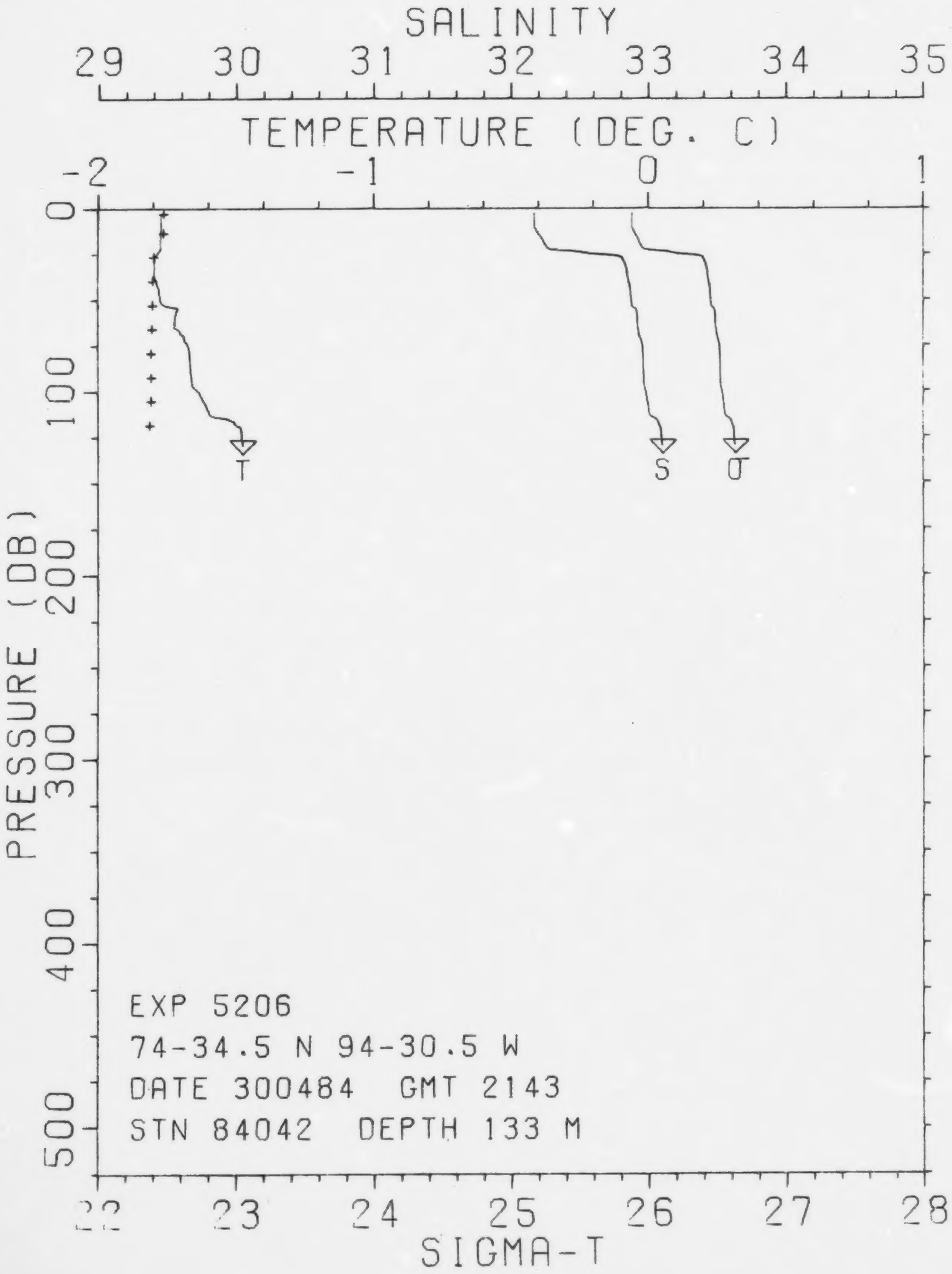
SIGMA-T



EXP 5206
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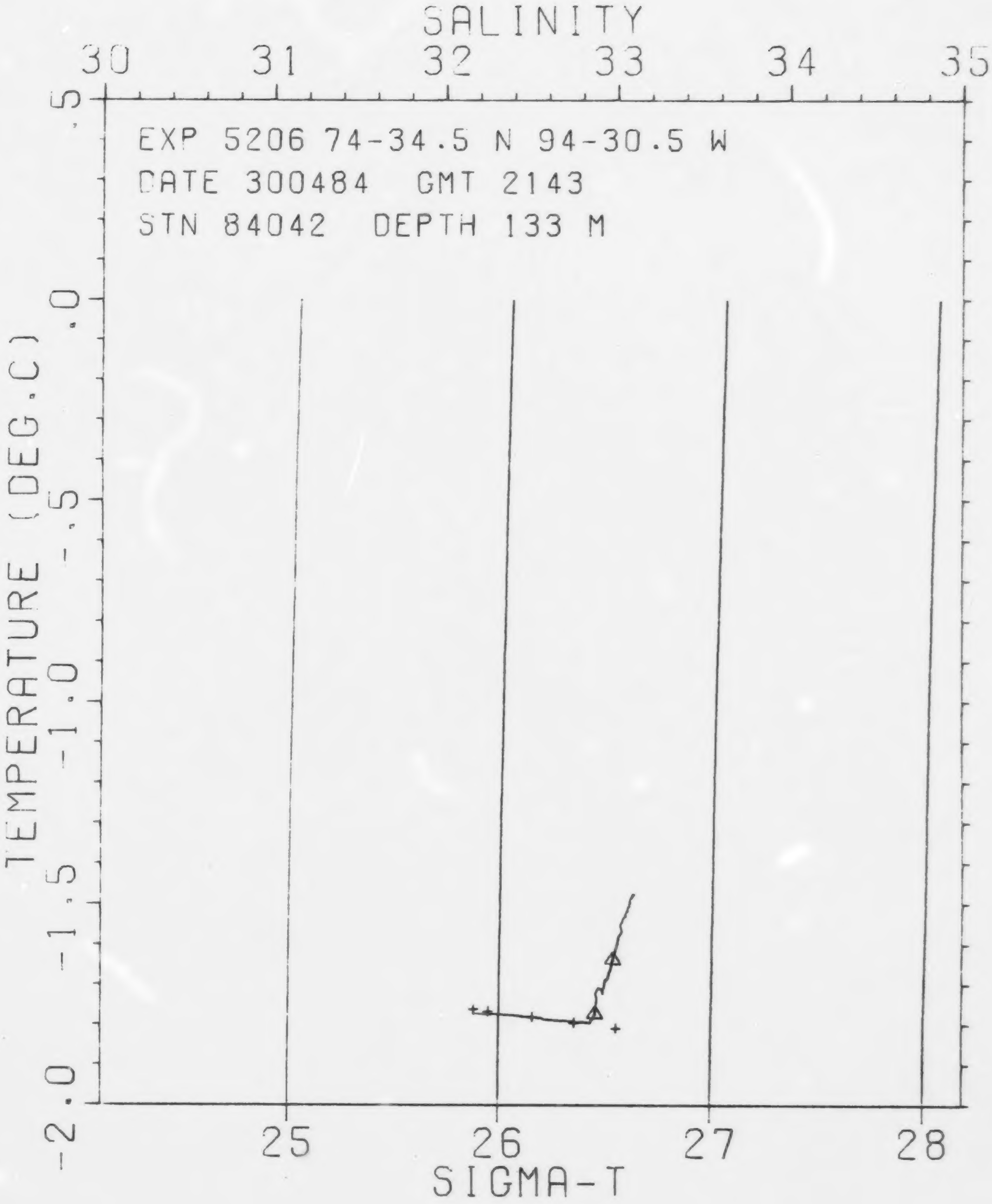
DATE 300484 GMT 2143
STN 84042 DEPTH 133 M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DATE 300484 GMT 2143
STN 84042 DEPTH 133 M
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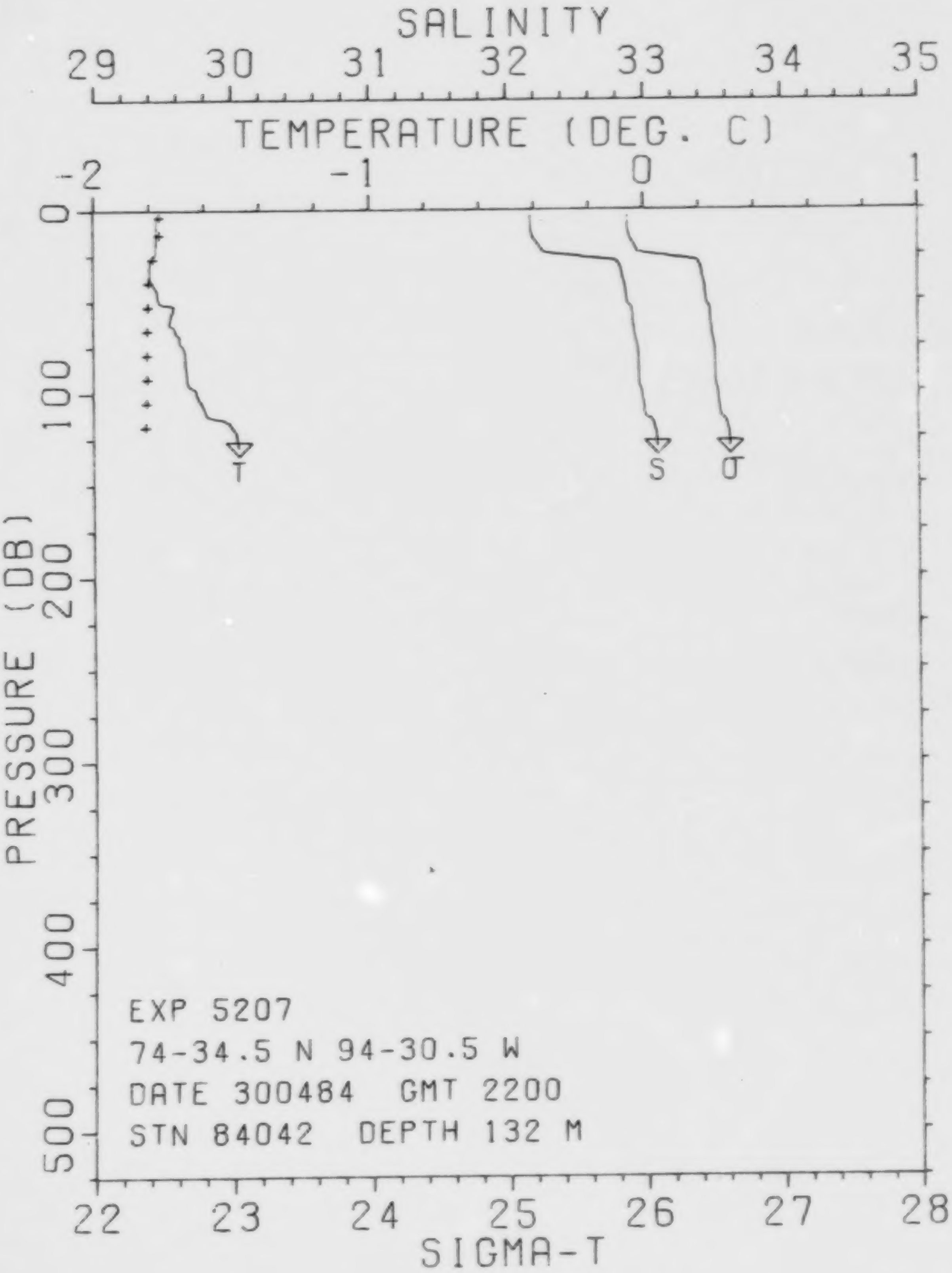
SIGMA-T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PRESSURE (DB)
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EXP 5207
74-34.5 N 94-30.5 W
DATE 300484 GMT 2200
STN 84042 DEPTH 132 M
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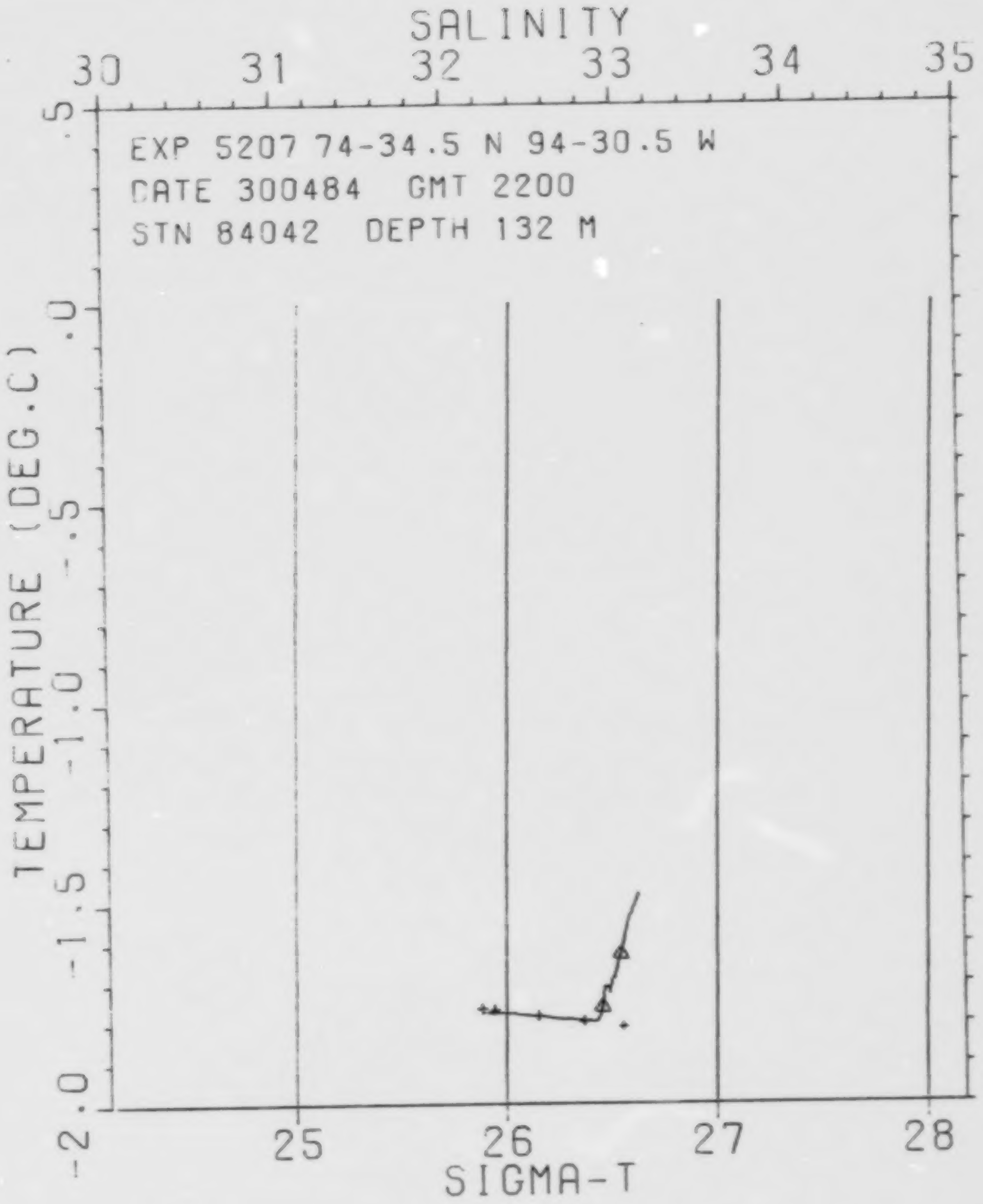
SIGMA-T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EXP 5207 74-34.5 N 94-30.5 W
DATE 300484 GMT 2200
STN 84042 DEPTH 132 M
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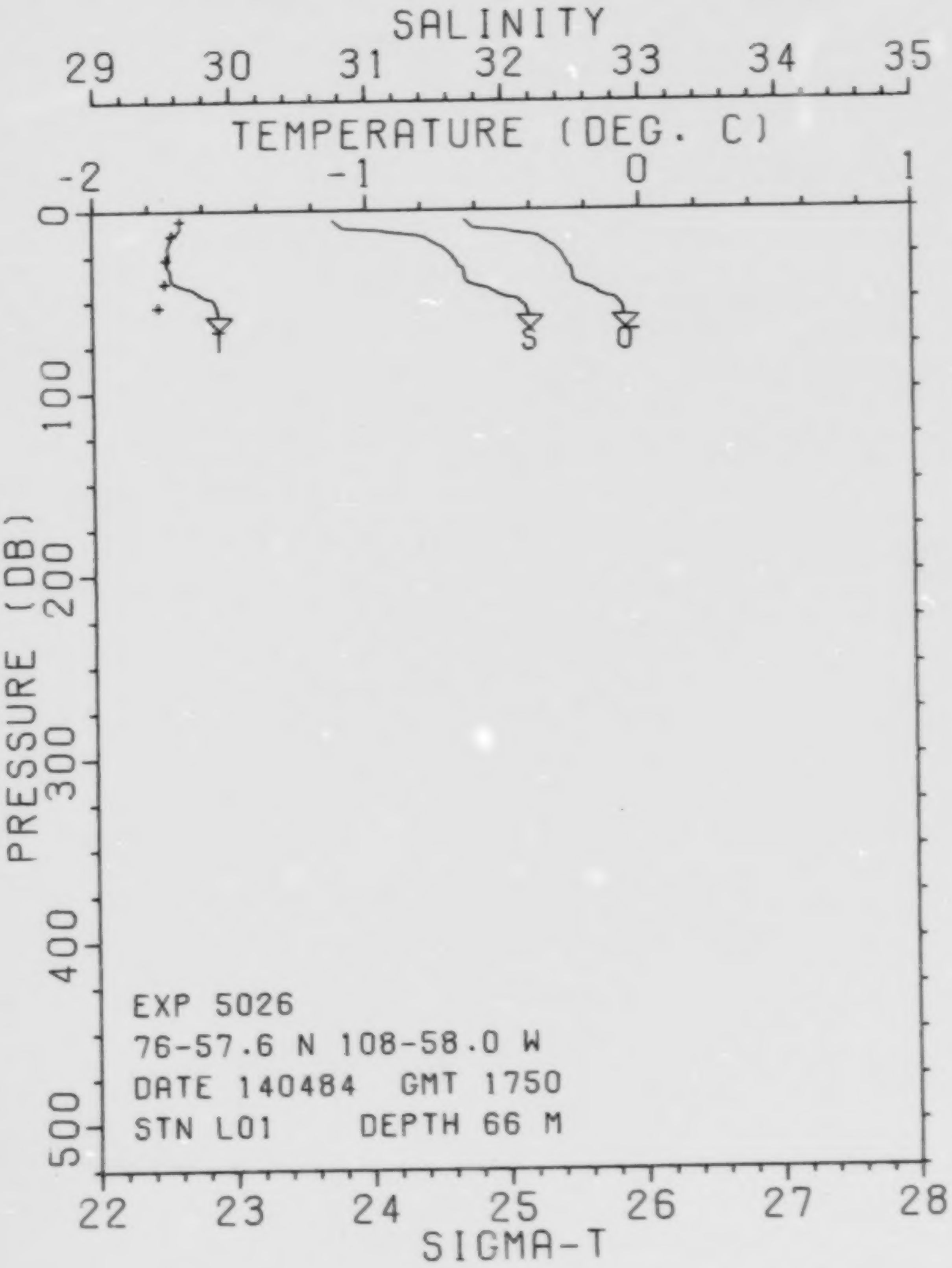
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PRESSURE (DB)
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EXP 5026
76-57.6 N 108-58.0 W
DATE 140484 GMT 1750
STN L01 DEPTH 66 M
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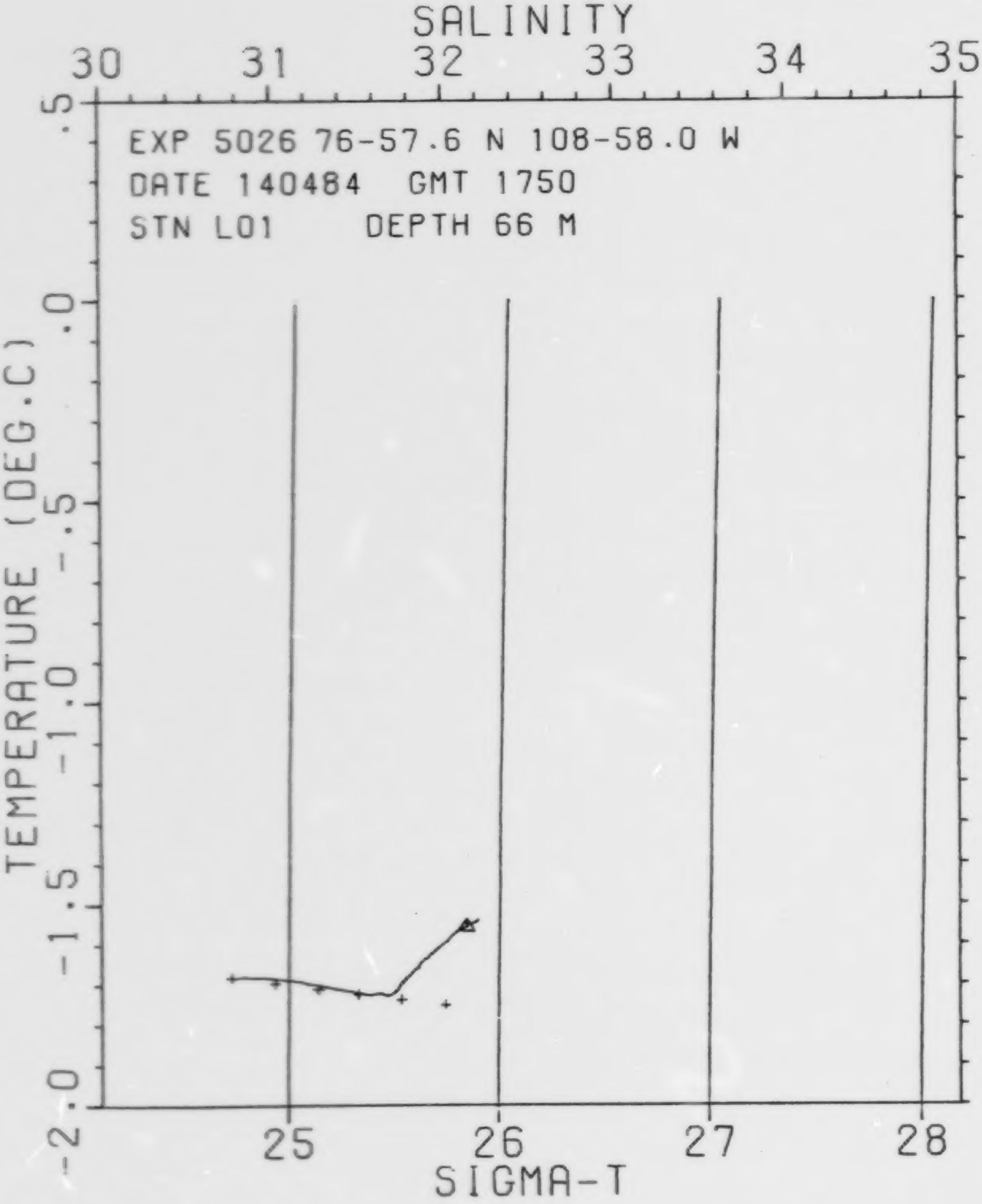
SIGMA-T


SALINITY
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EXP 5026 76-57.6 N 108-58.0 W
DATE 140484 GMT 1750
STN L01 DEPTH 66 M
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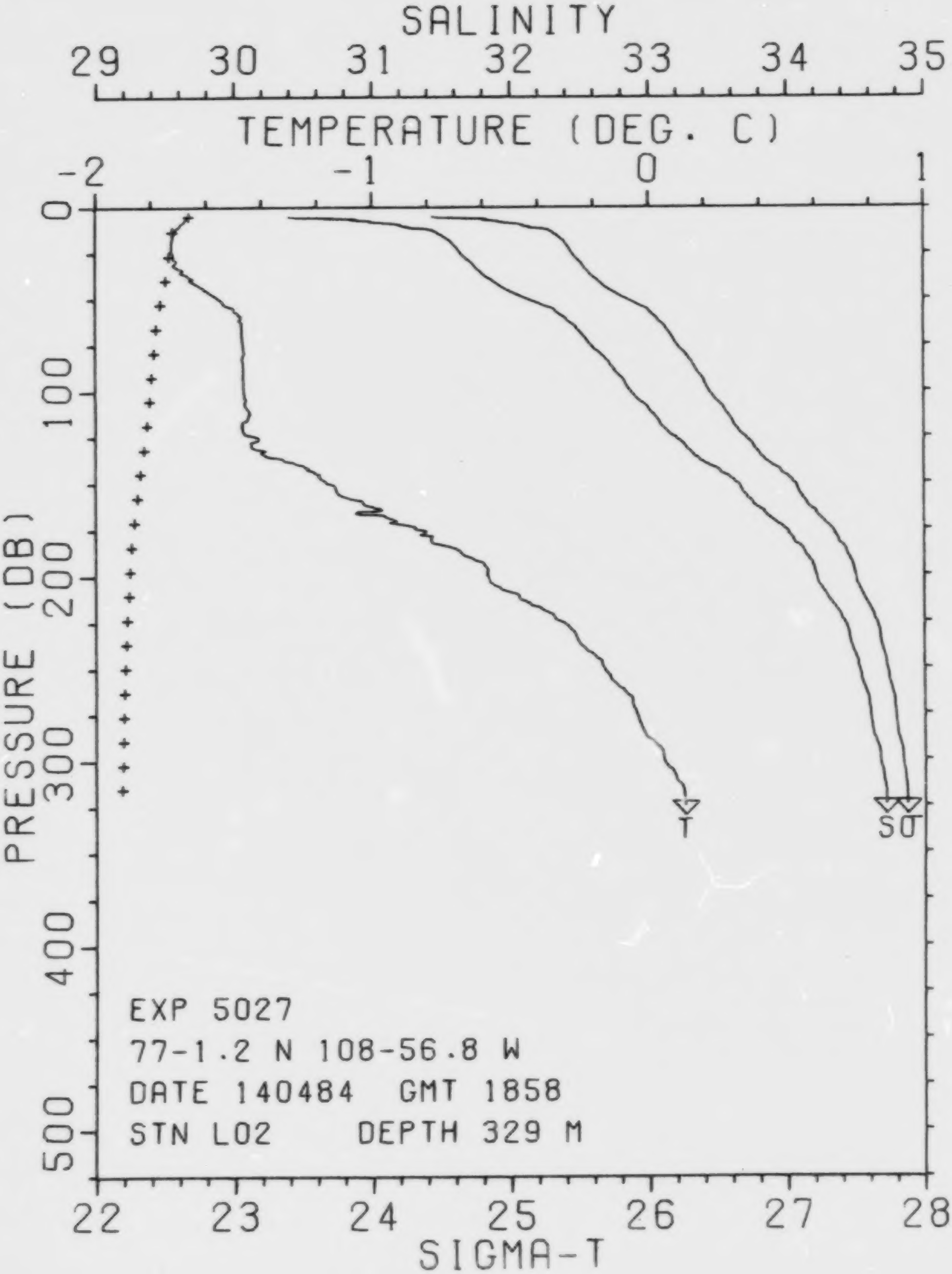
SIGMA-T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PRESSURE (DB)
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EXP 5027
77-1.2 N 108-56.8 W
DATE 140484 GMT 1858
STN L02 DEPTH 329 M
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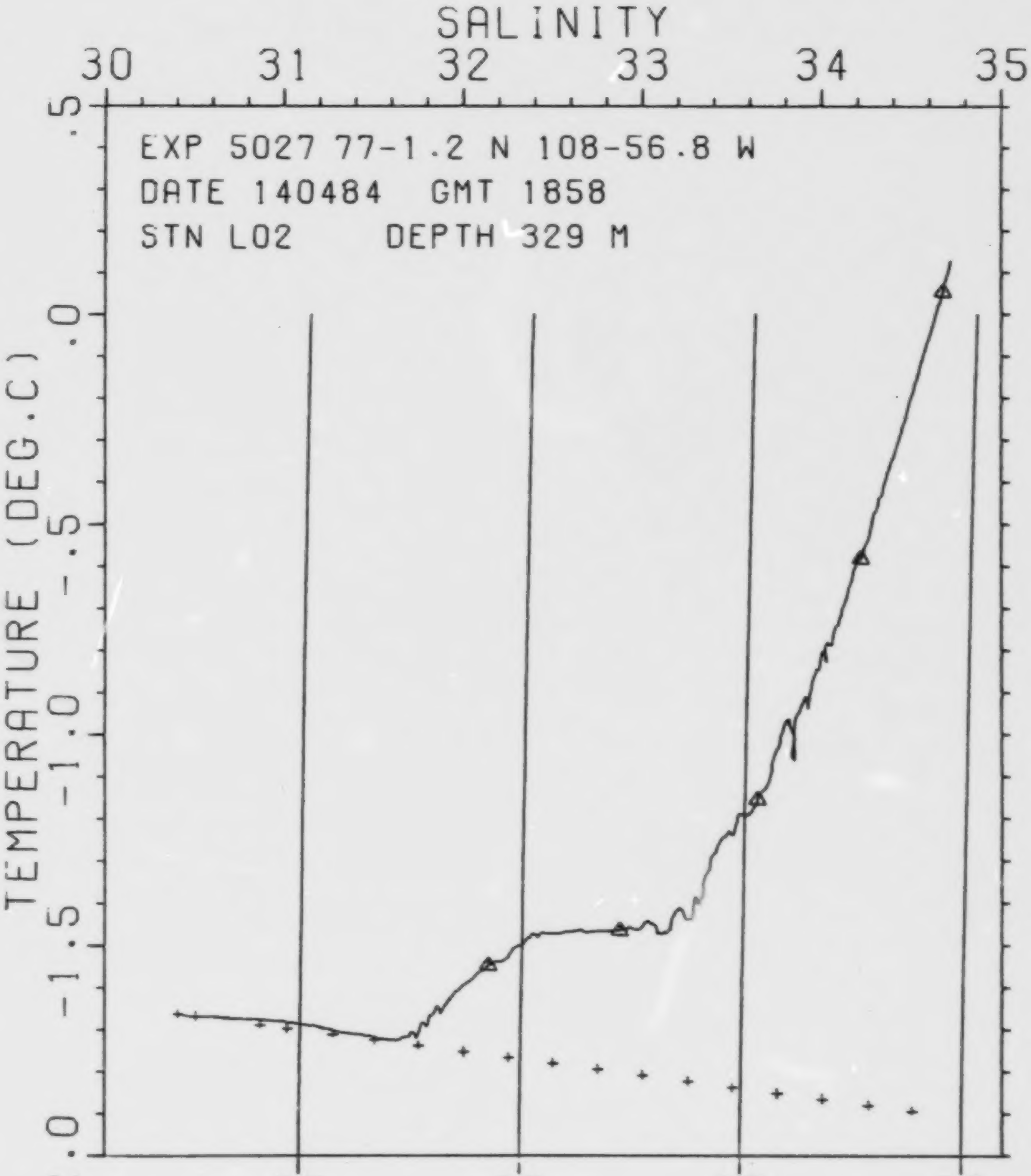
SIGMA-T


SALINITY
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EXP 5027 77-1.2 N 108-56.8 W
DATE 140484 GMT 1858
STN L02 DEPTH 329 M
TEMPERATURE (DEG.C)
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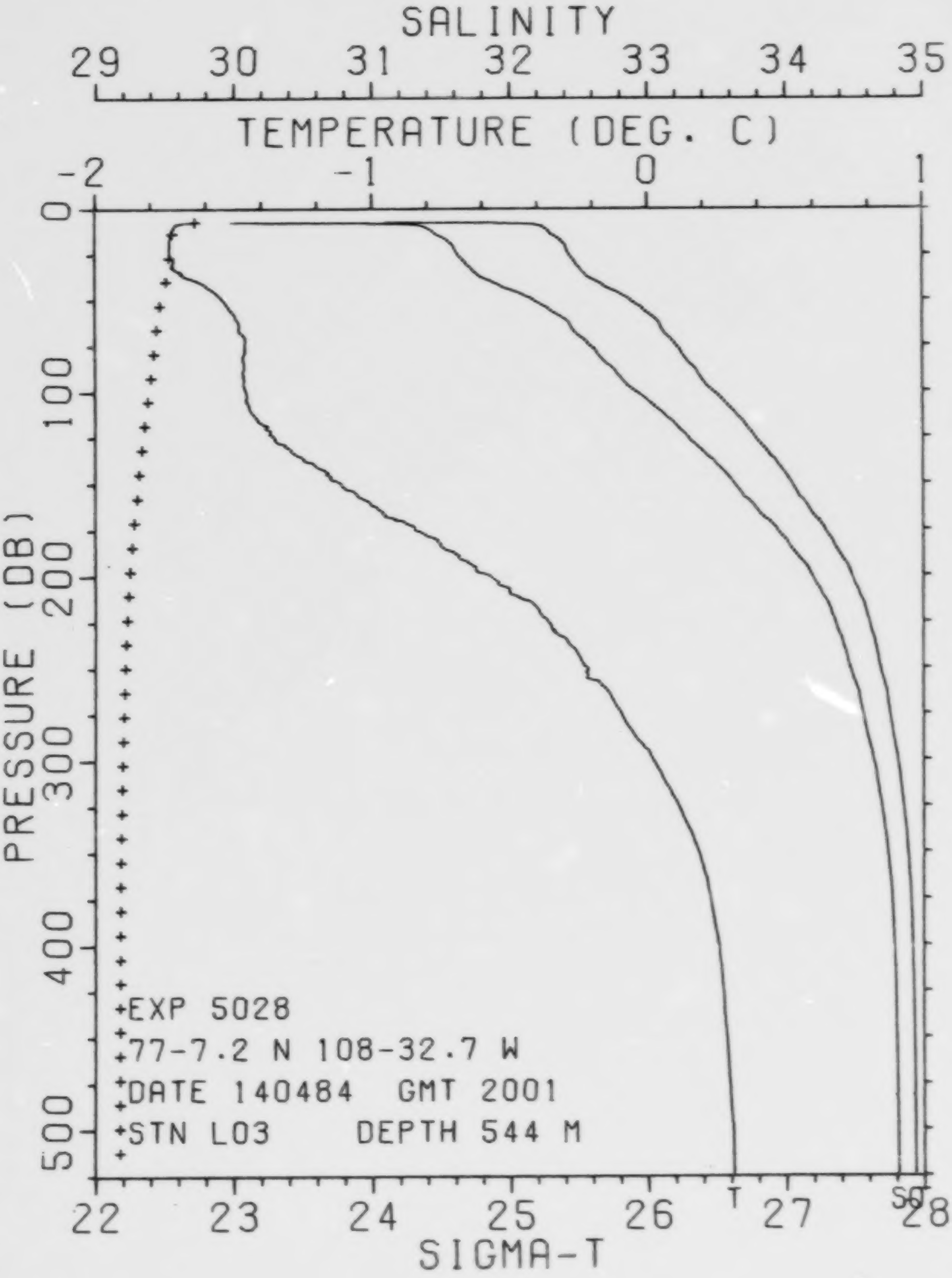
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5028
77-7.2 N 108-32.7 W
DATE 140484 GMT 2001
STN L03 DEPTH 544 M
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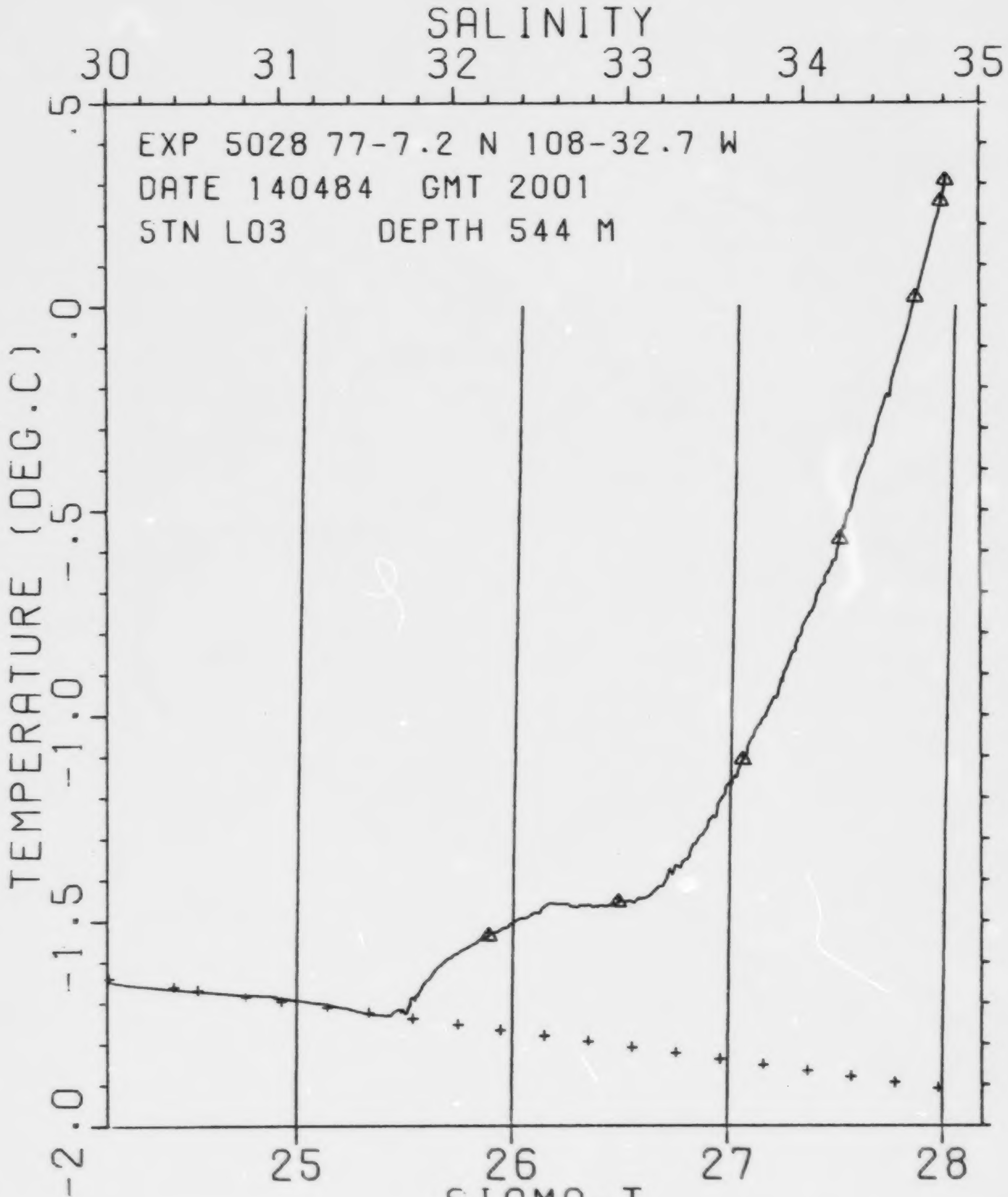
SIGMA-T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TEMPERATURE (DEG.C)
EXP 5028 77-7.2 N 108-32.7 W
DATE 140484 GMT 2001
STN L03 DEPTH 544 M
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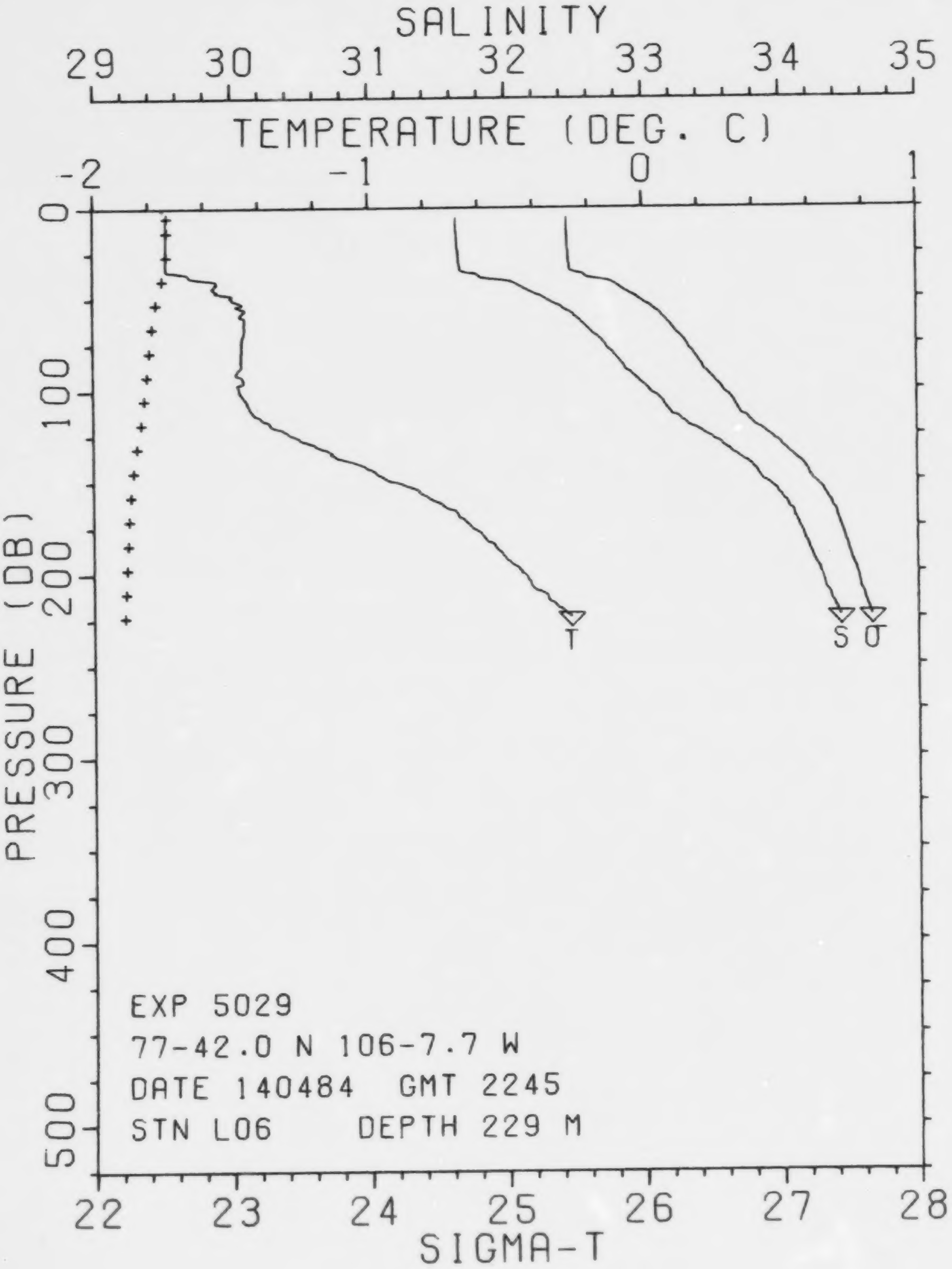
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5029
77-42.0 N 106-7.7 W
DATE 140484 GMT 2245
STN L06 DEPTH 229 M
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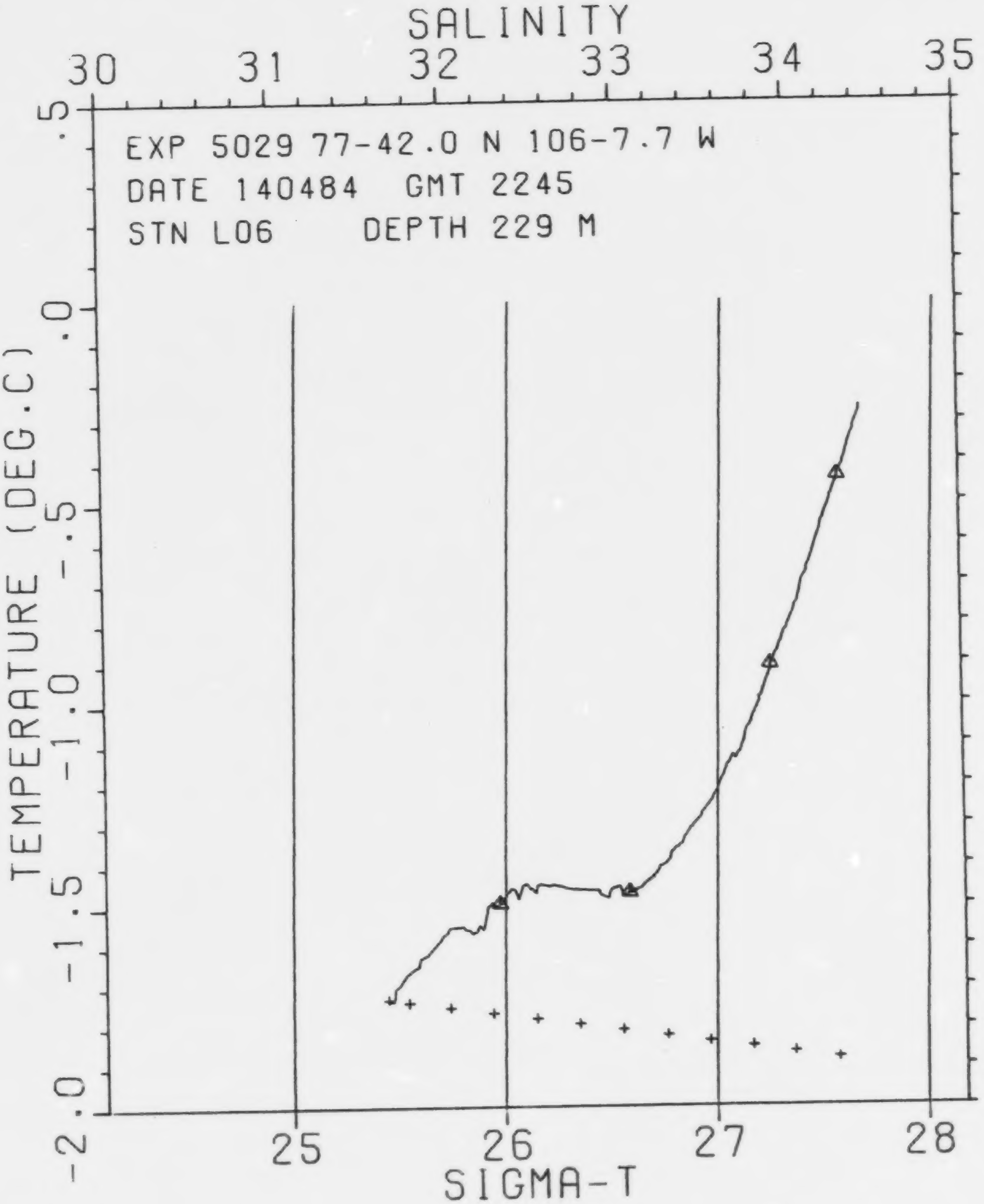
SIGMA-T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EXP 5029 77-42.0 N 106-7.7 W
DATE 140484 GMT 2245
STN L06 DEPTH 229 M
TEMPERATURE (DEG.C)
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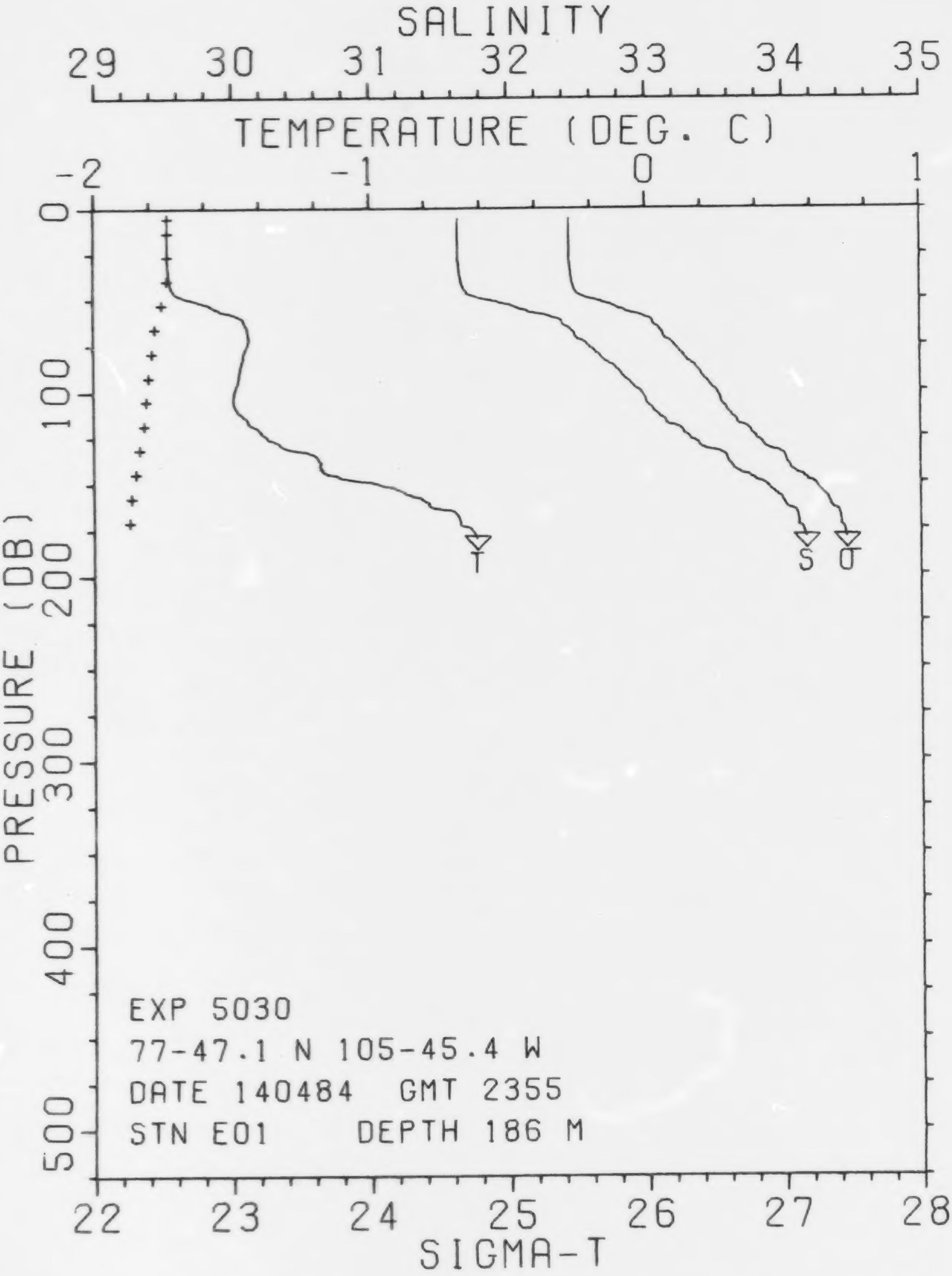
SIGMA-T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PRESSURE (DB)
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EXP 5030
77-47.1 N 105-45.4 W
DATE 140484 GMT 2355
STN E01 DEPTH 186 M
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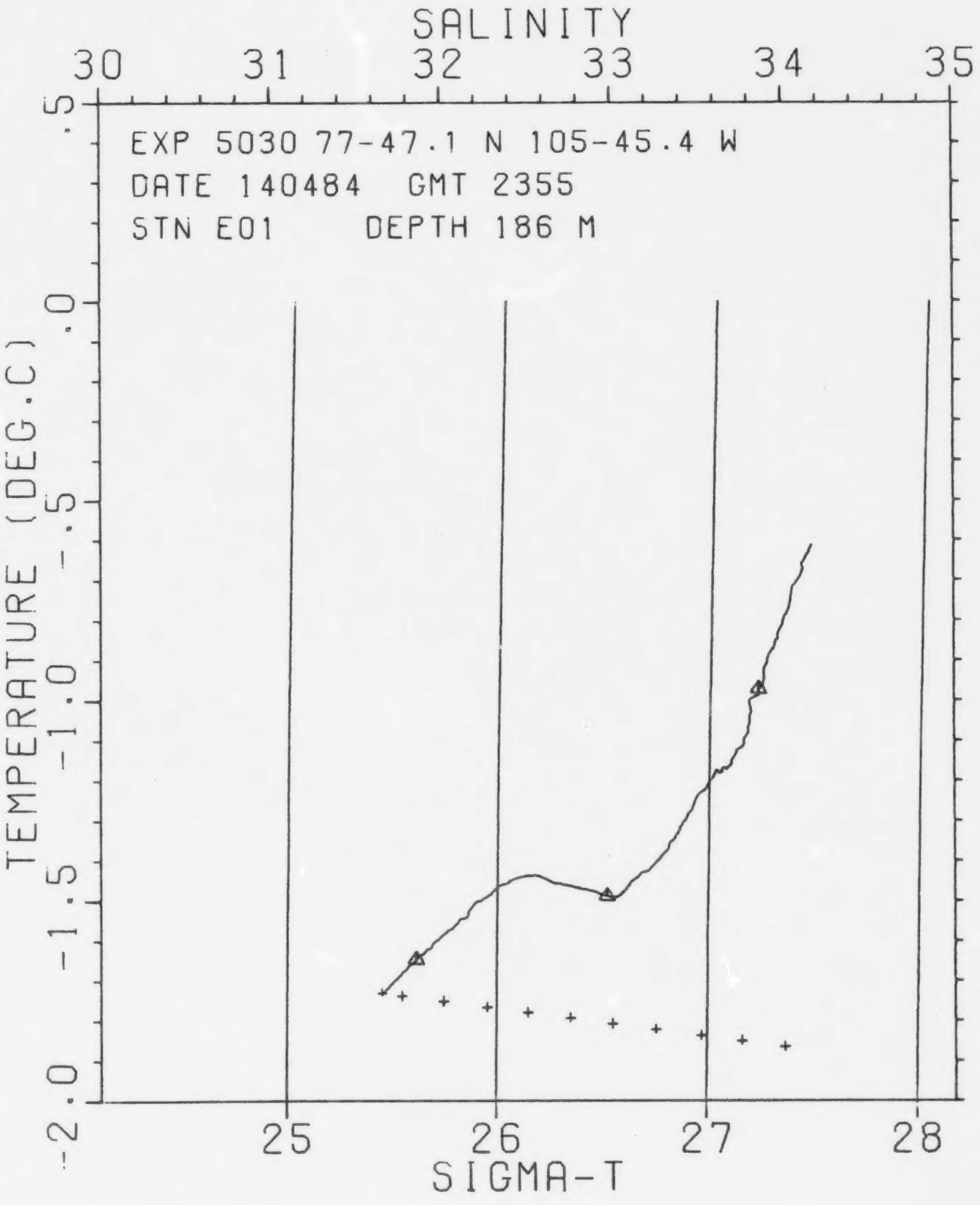
SIGMA-T


SALINITY
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EXP 5030 77-47.1 N 105-45.4 W
DATE 140484 GMT 2355
STN E01 DEPTH 186 M
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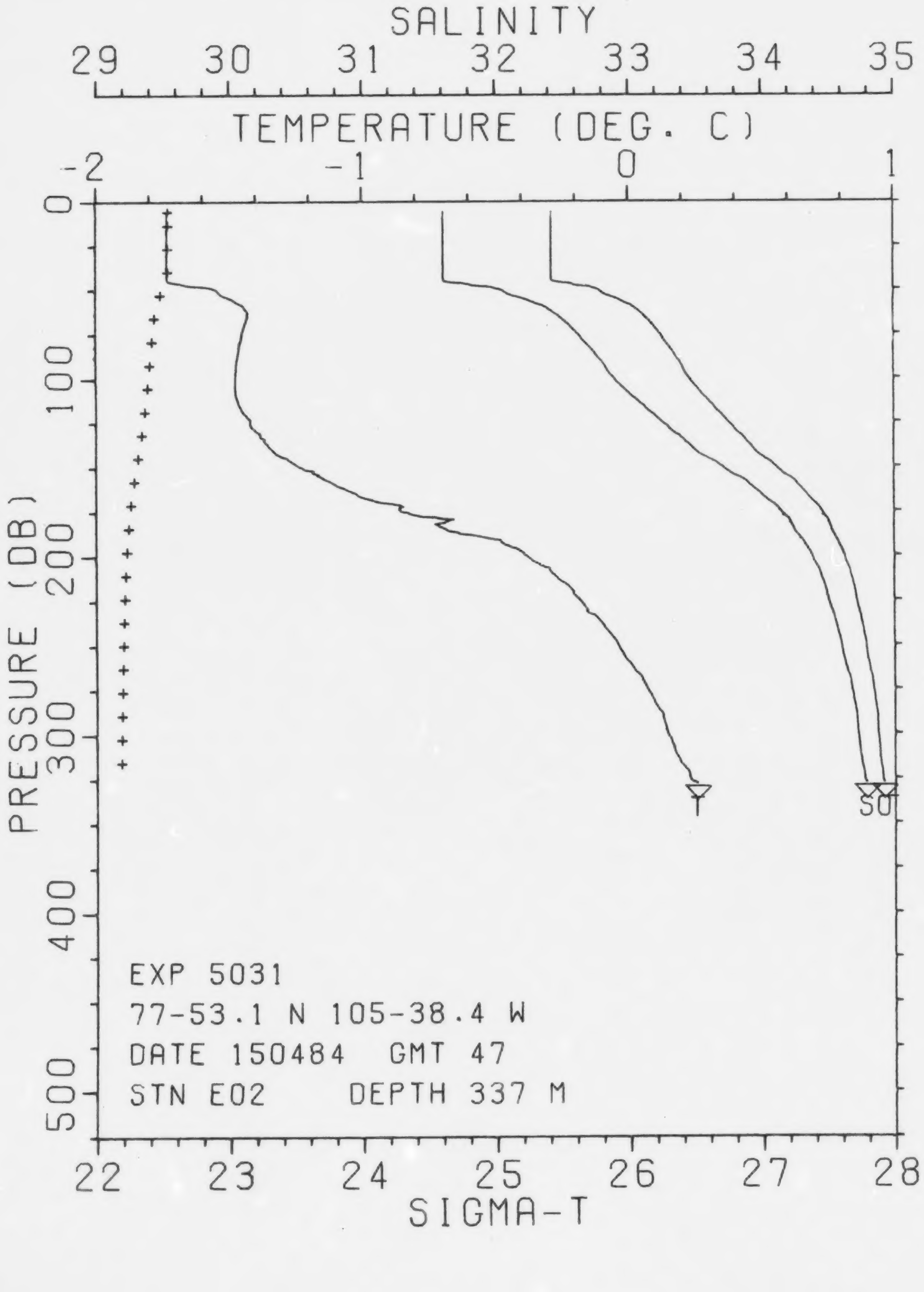
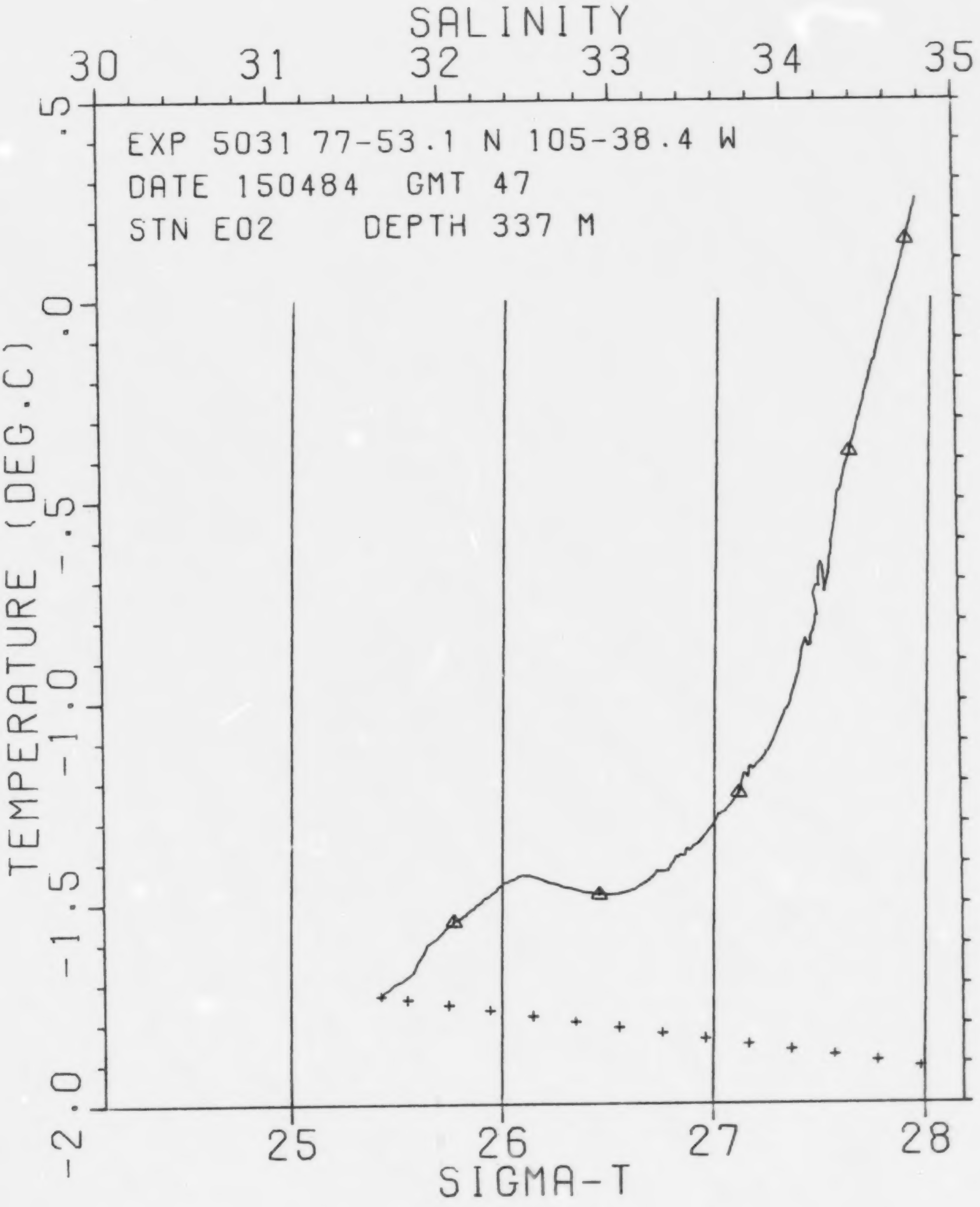
SIGMA-T



EXP 5031
77-53.1 N 105-38.4 W
DATE 150484 GMT 47
STN E02 DEPTH 337 M


SALINITY
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EXP 5031 77-53.1 N 105-38.4 W
DATE 150484 GMT 47
STN E02 DEPTH 337 M
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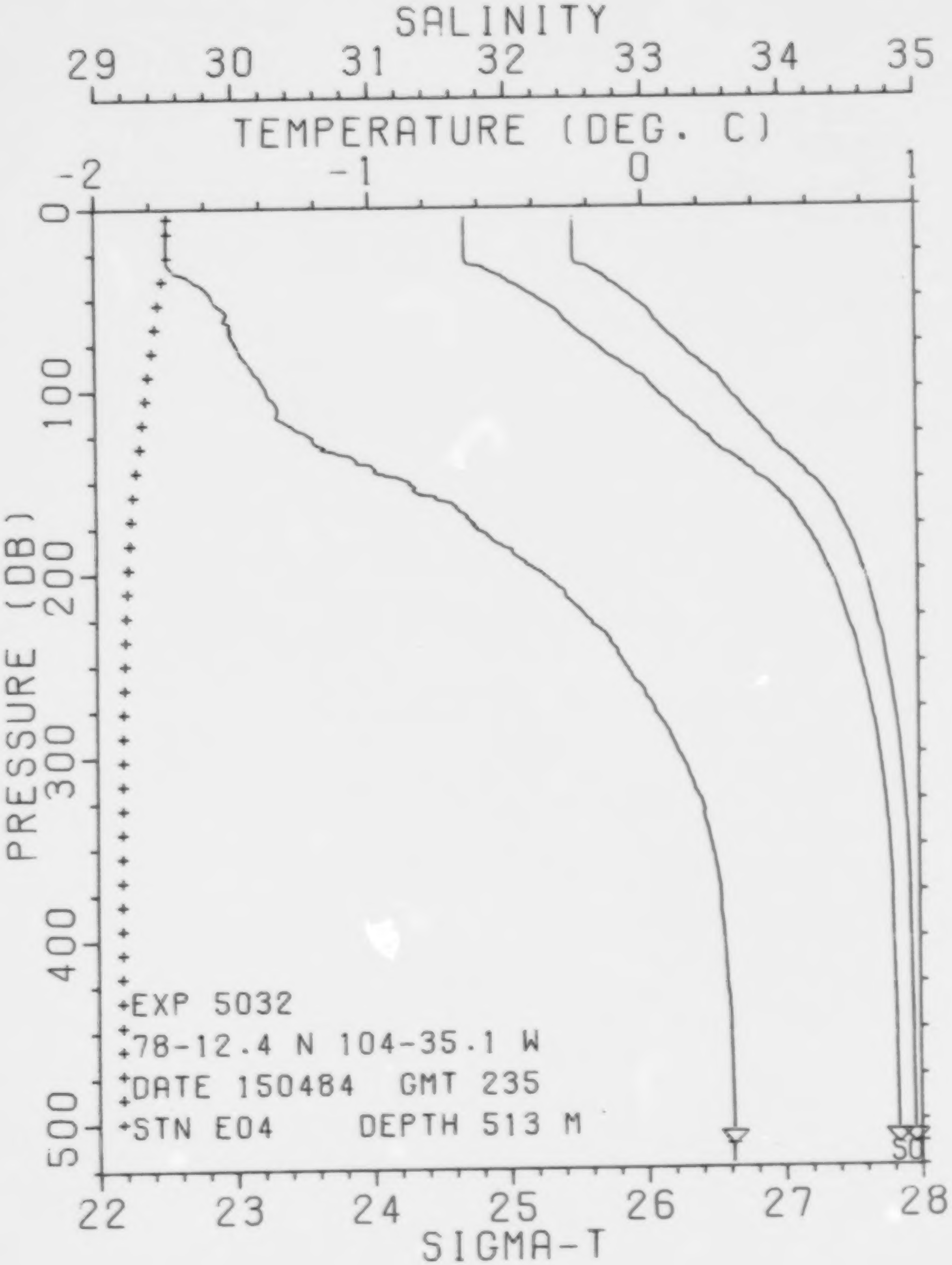
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PRESSURE (DB)
EXP 5032
78-12.4 N 104-35.1 W
DATE 150484 GMT 235
STN E04 DEPTH 513 M
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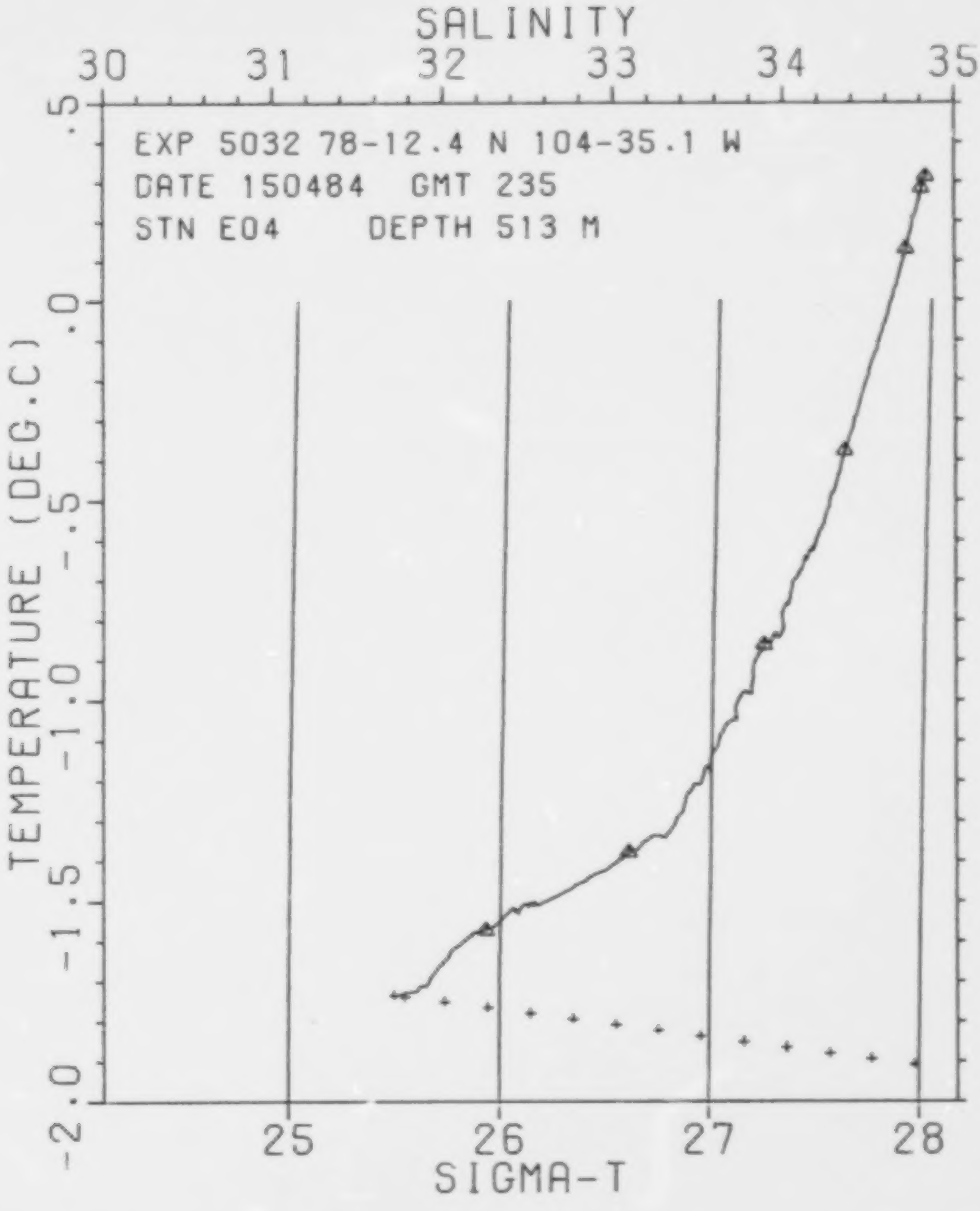
SIGMA-T


SALINITY
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EXP 5032 78-12.4 N 104-35.1 W
DATE 150484 GMT 235
STN E04 DEPTH 513 M
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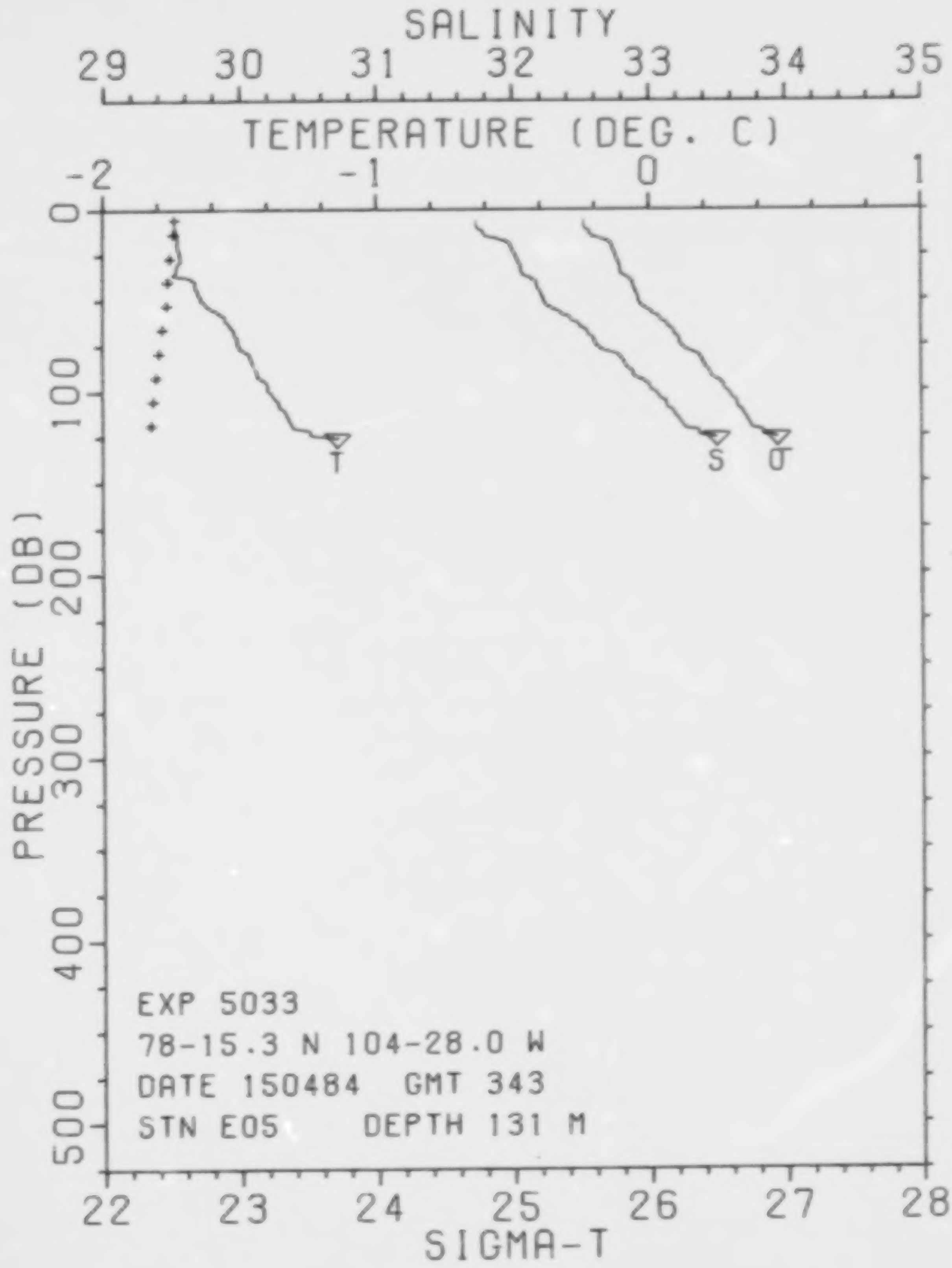
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5033
78-15.3 N 104-28.0 W
DATE 150484 GMT 343
STN E05 DEPTH 131 M
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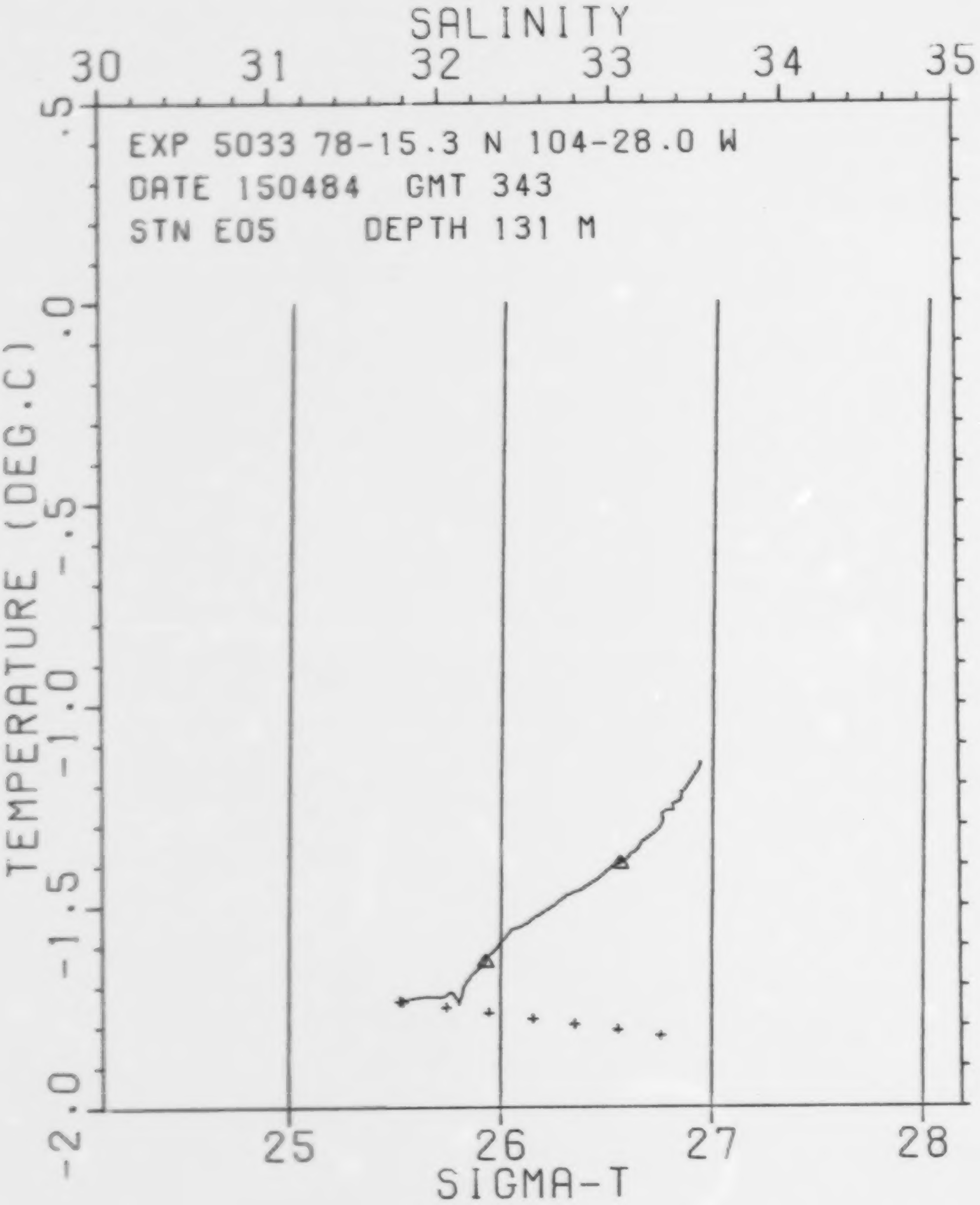
SIGMA-T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EXP 5033 78-15.3 N 104-28.0 W
DATE 150484 GMT 343
STN E05 DEPTH 131 M
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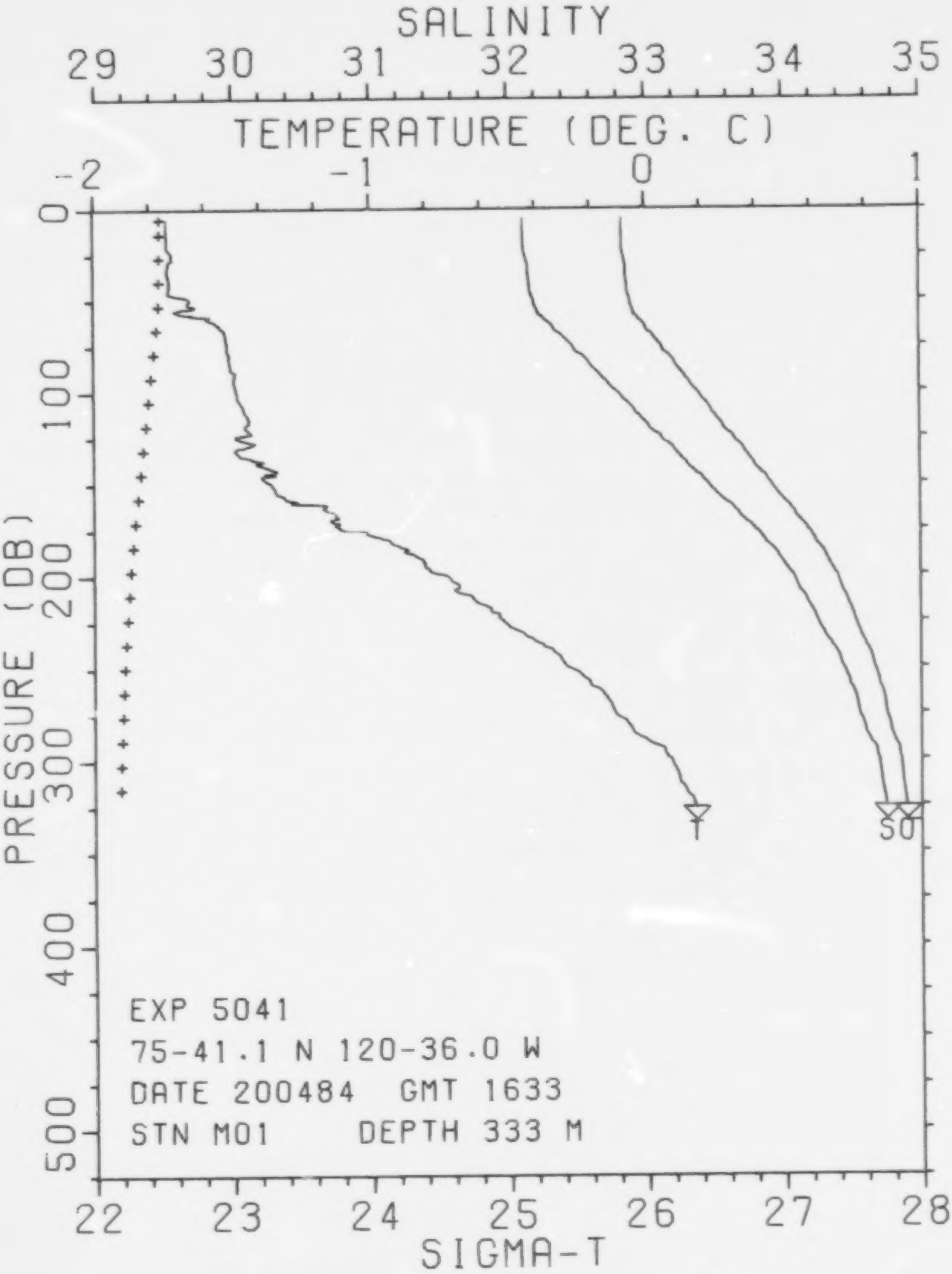
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5041
75-41.1 N 120-36.0 W
DATE 200484 GMT 1633
STN M01 DEPTH 333 M
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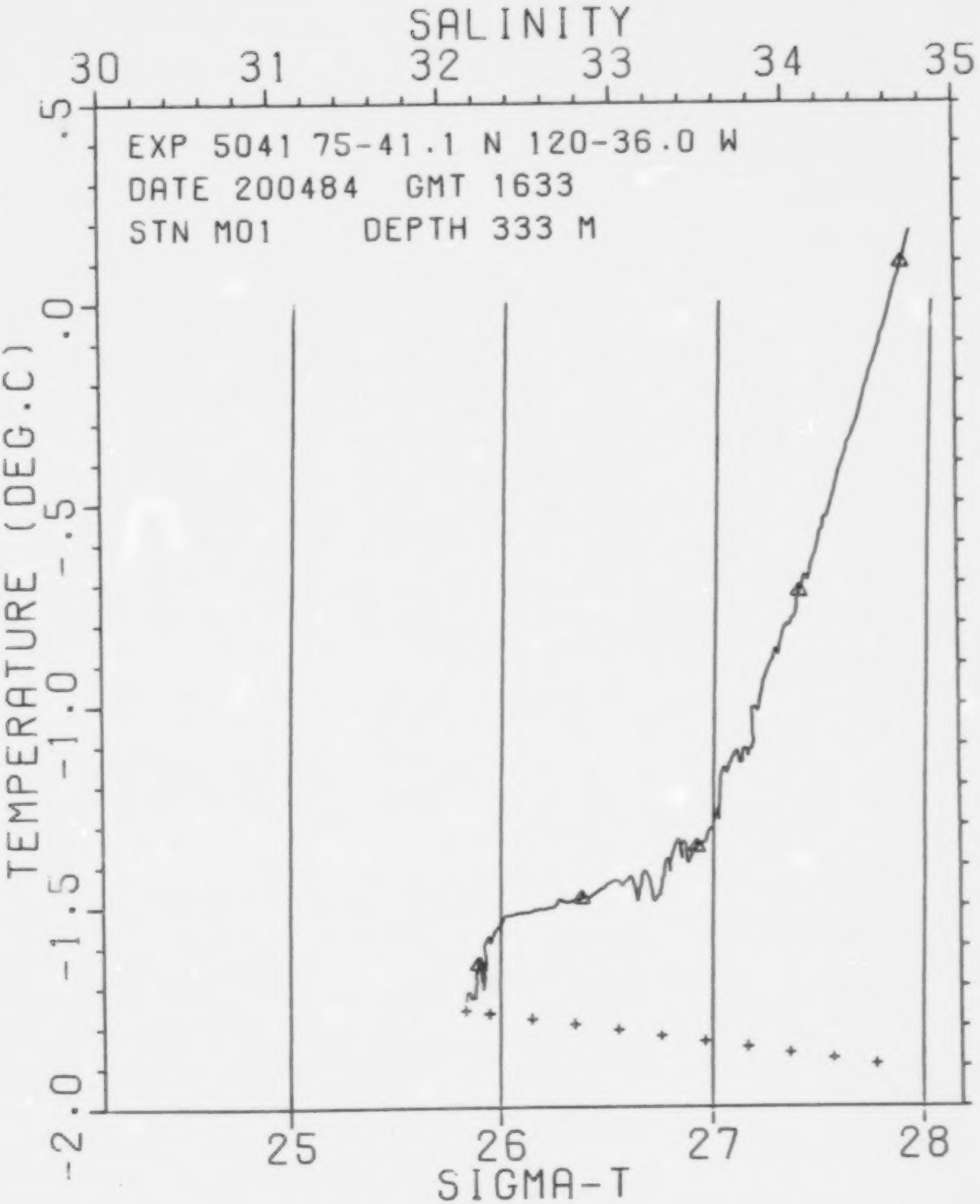
SIGMA-T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EXP 5041 75-41.1 N 120-36.0 W
DATE 200484 GMT 1633
STN M01 DEPTH 333 M
TEMPERATURE (DEG.C)
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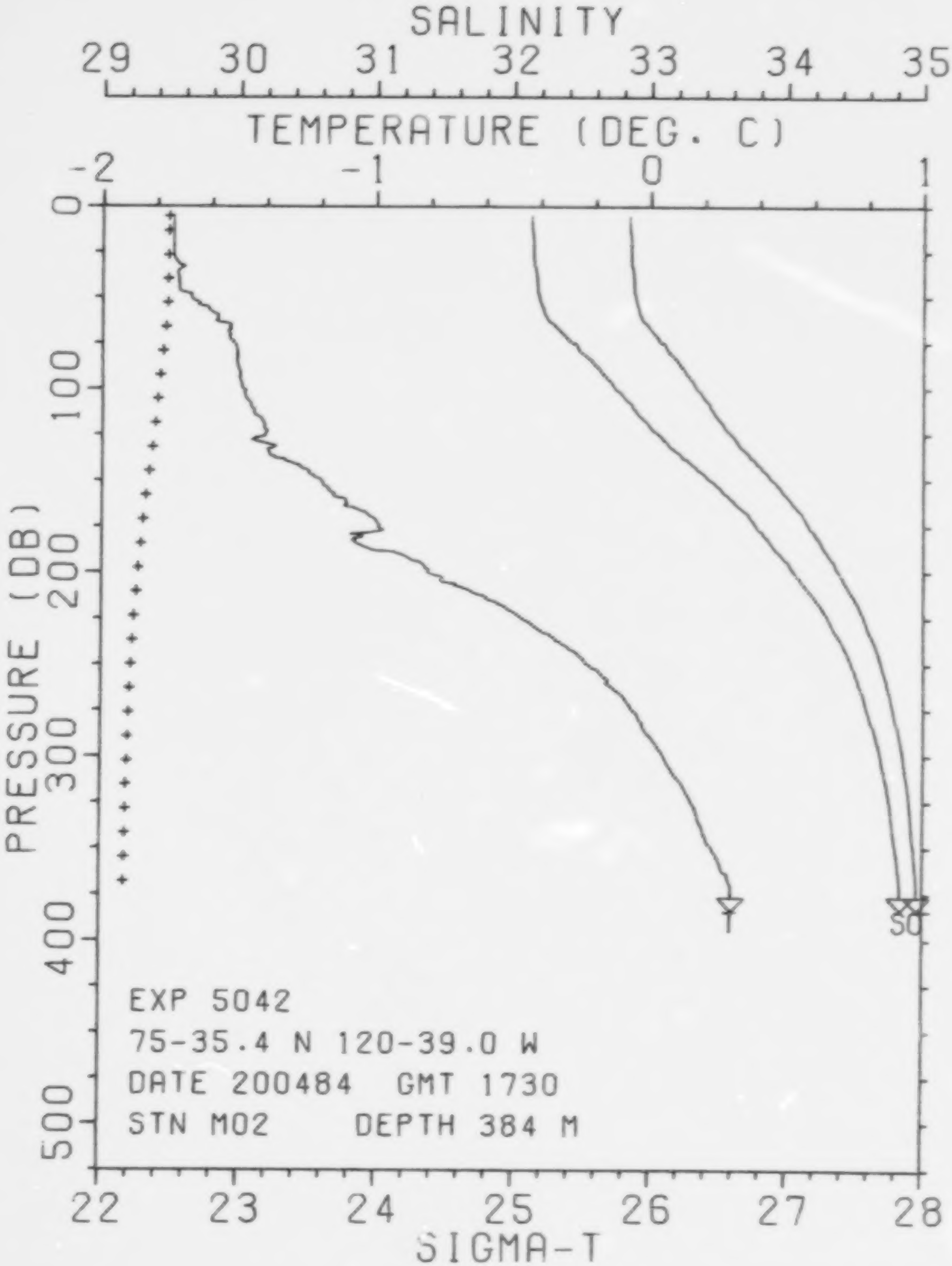
SIGMA-T



EXP 5042
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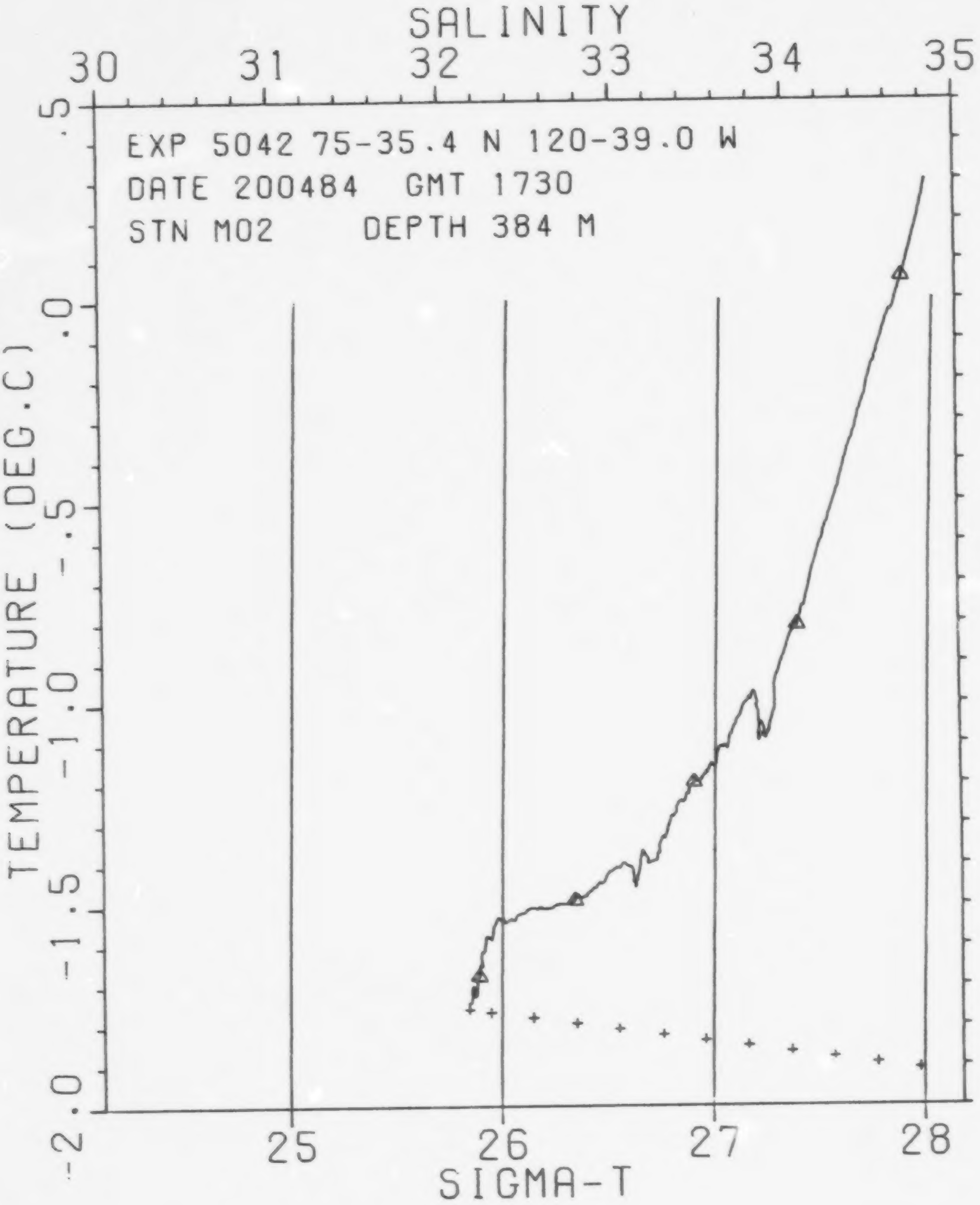
DATE 200484 GMT 1730
STN M02 DEPTH 384 M


SALINITY
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EXP 5042 75-35.4 N 120-39.0 W
DATE 200484 GMT 1730
STN M02 DEPTH 384 M
TEMPERATURE (DEG.C)
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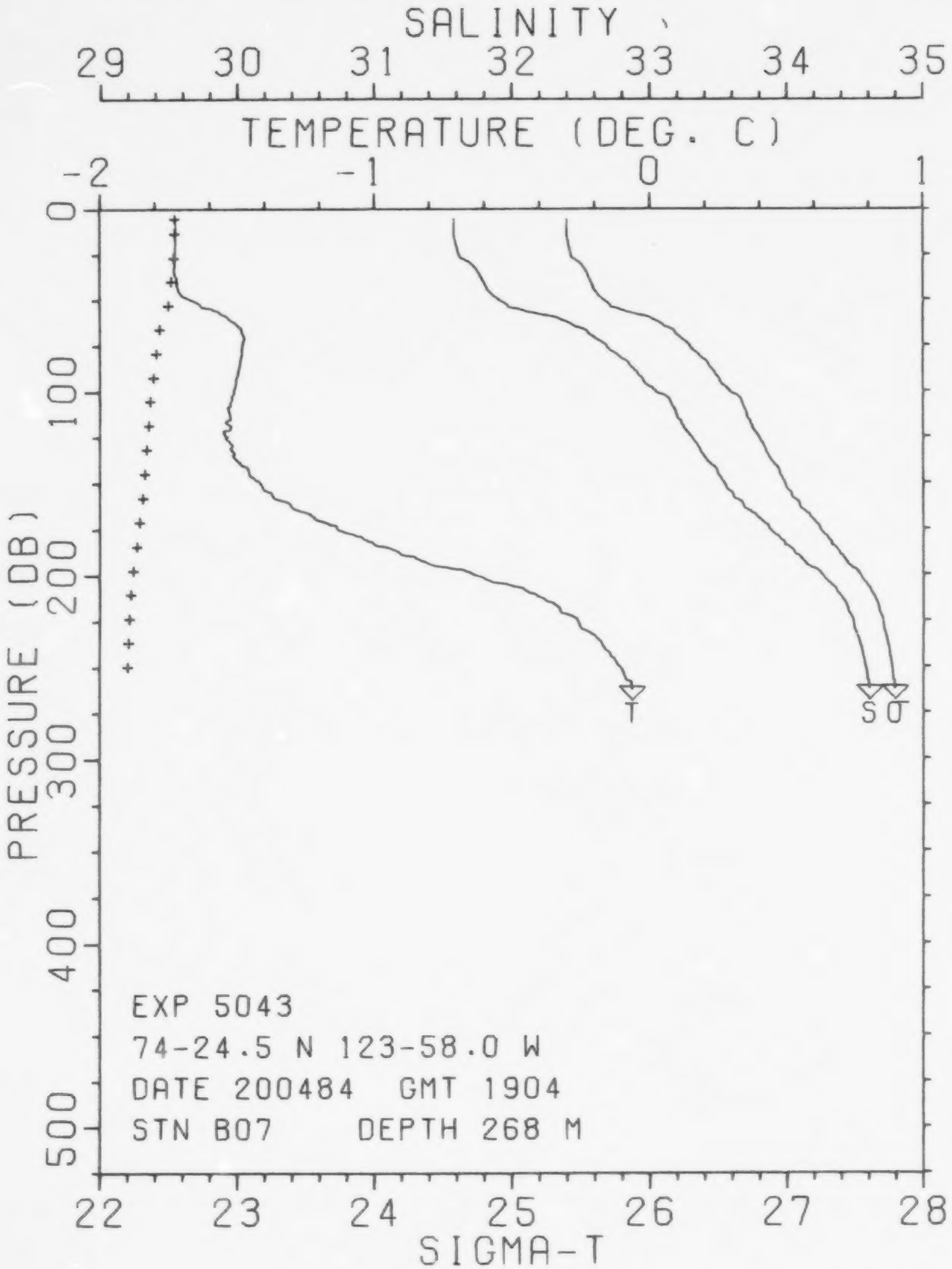
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5043
74-24.5 N 123-58.0 W
DATE 200484 GMT 1904
STN B07 DEPTH 268 M
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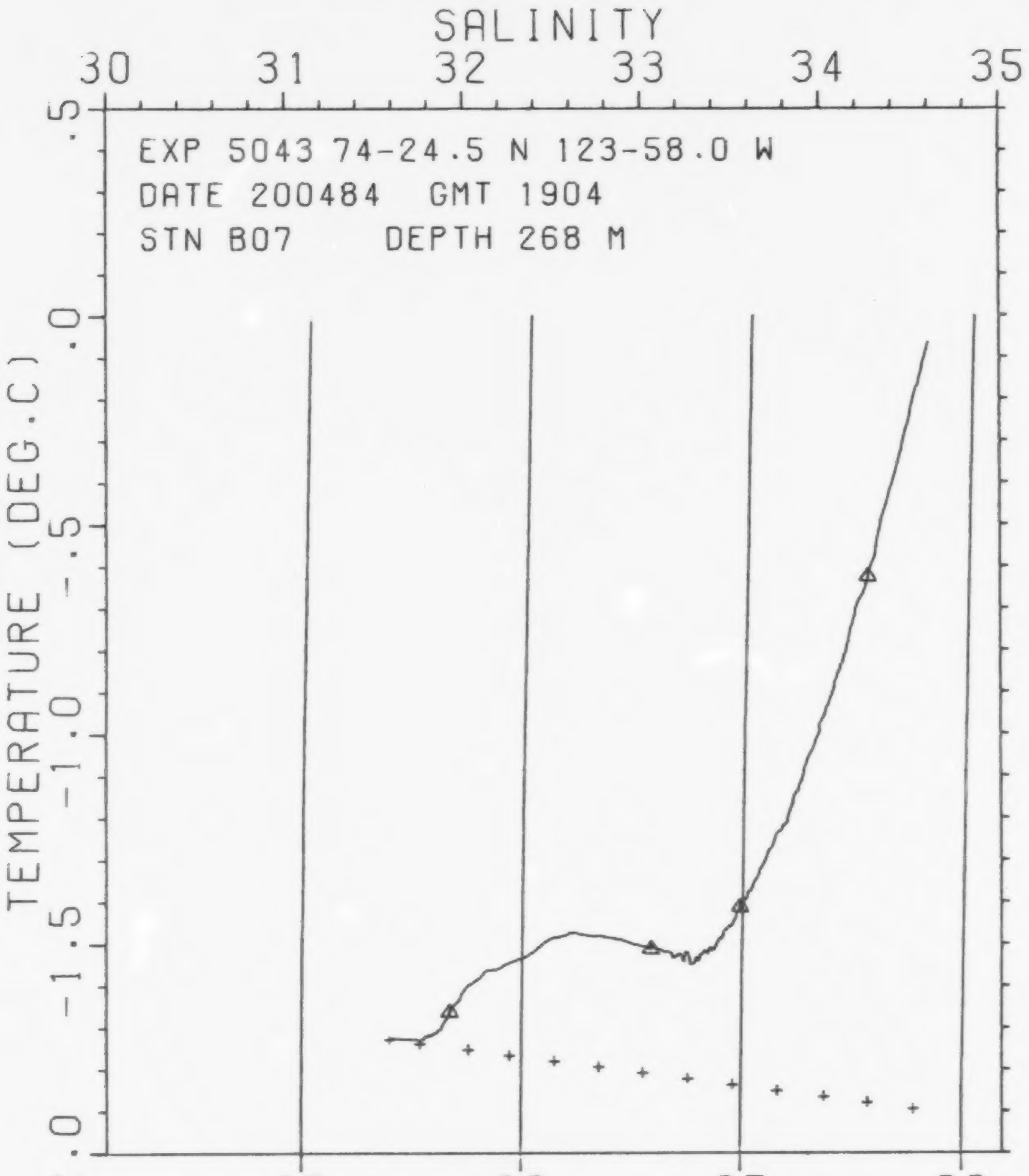
SIGMA-T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EXP 5043 74-24.5 N 123-58.0 W
DATE 200484 GMT 1904
STN B07 DEPTH 268 M
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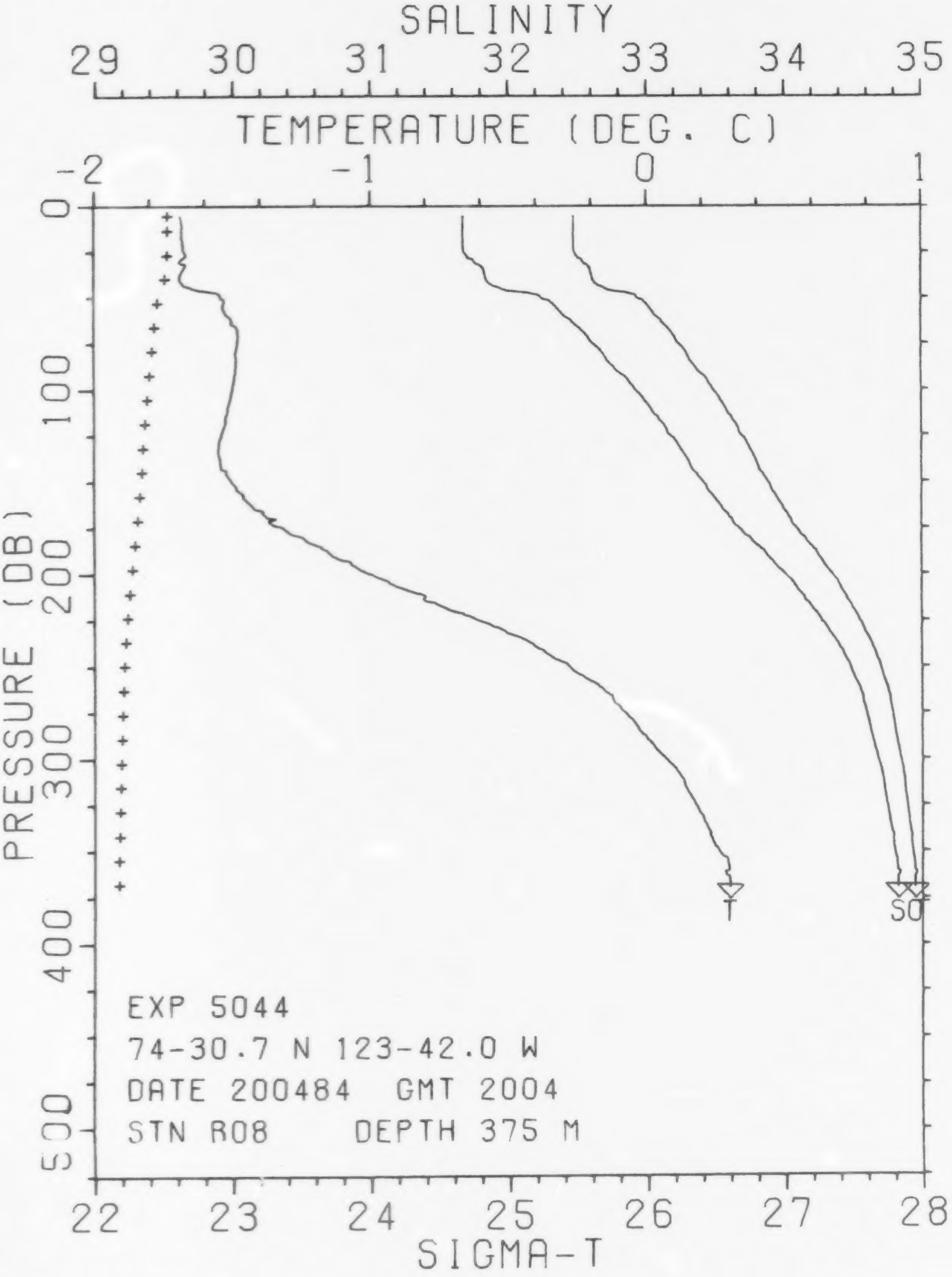
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5044
74-30.7 N 123-42.0 W
DATE 200484 GMT 2004
STN R08 DEPTH 375 M
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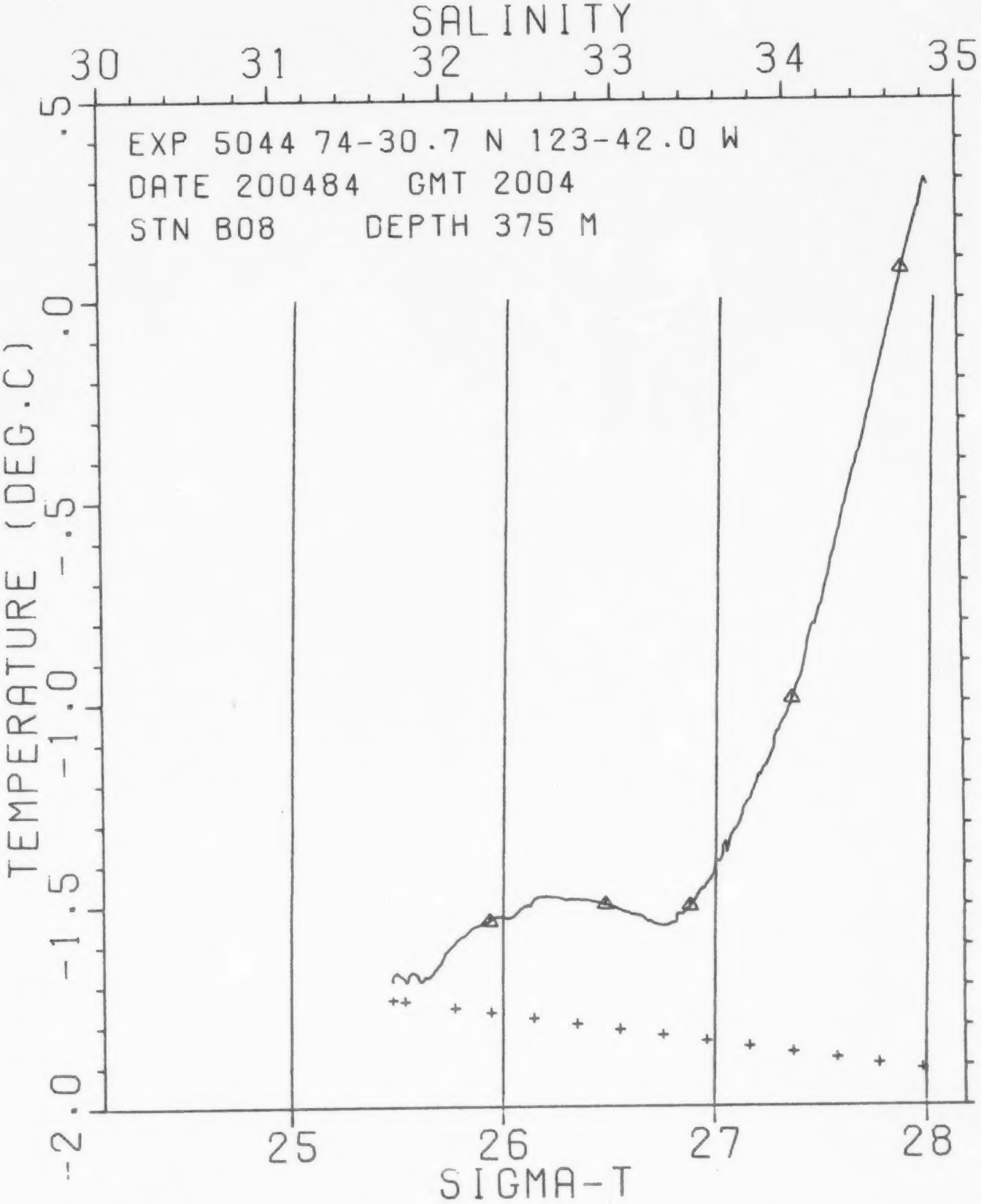
SIGMA-T


SALINITY
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EXP 5044 74-30.7 N 123-42.0 W
DATE 200484 GMT 2004
STN B08 DEPTH 375 M
TEMPERATURE (DEG.C)
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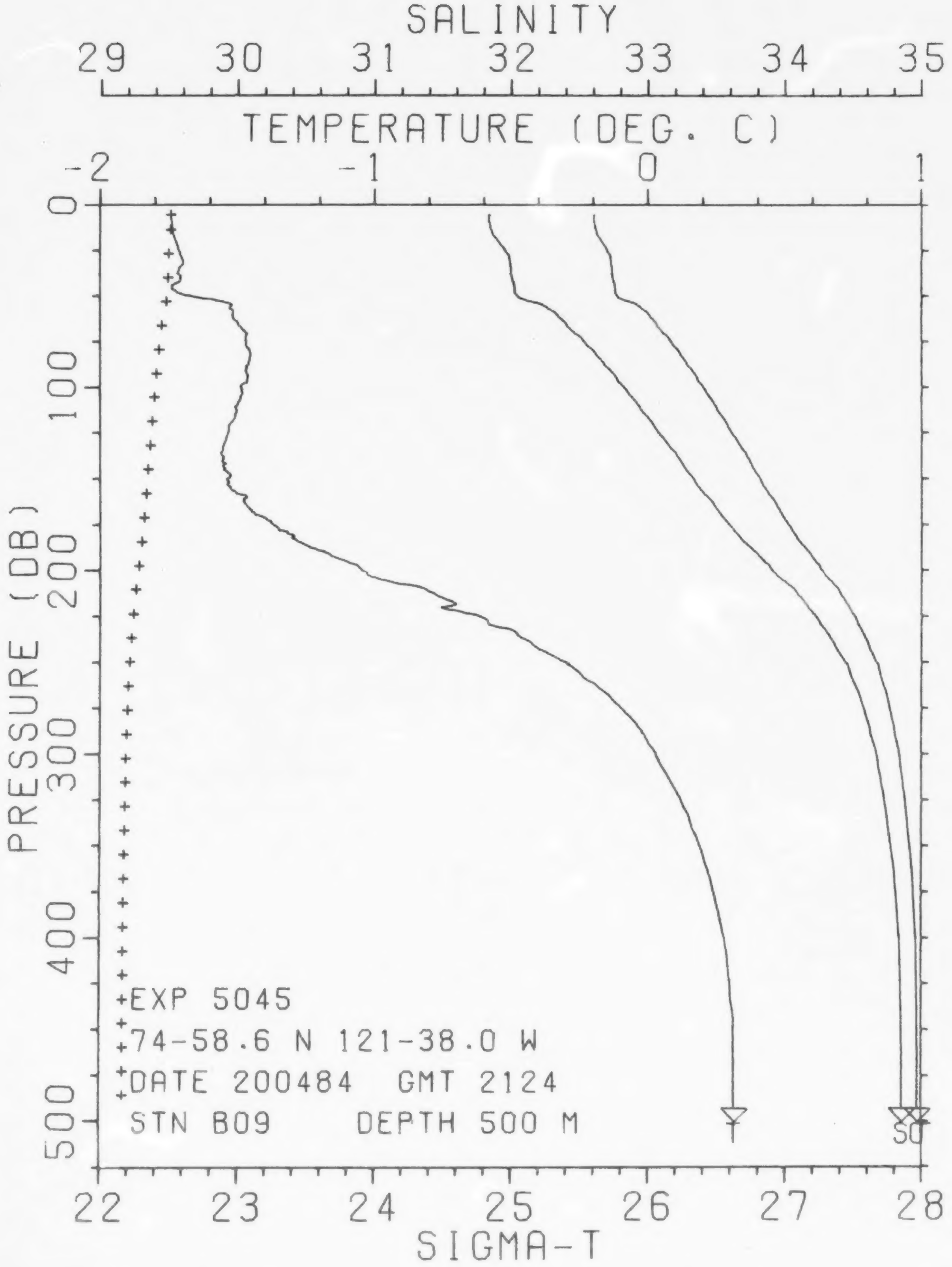
SIGMA-T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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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200
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EXP 5045
74-58.6 N 121-38.0 W
DATE 200484 GMT 2124
STN B09 DEPTH 500 M
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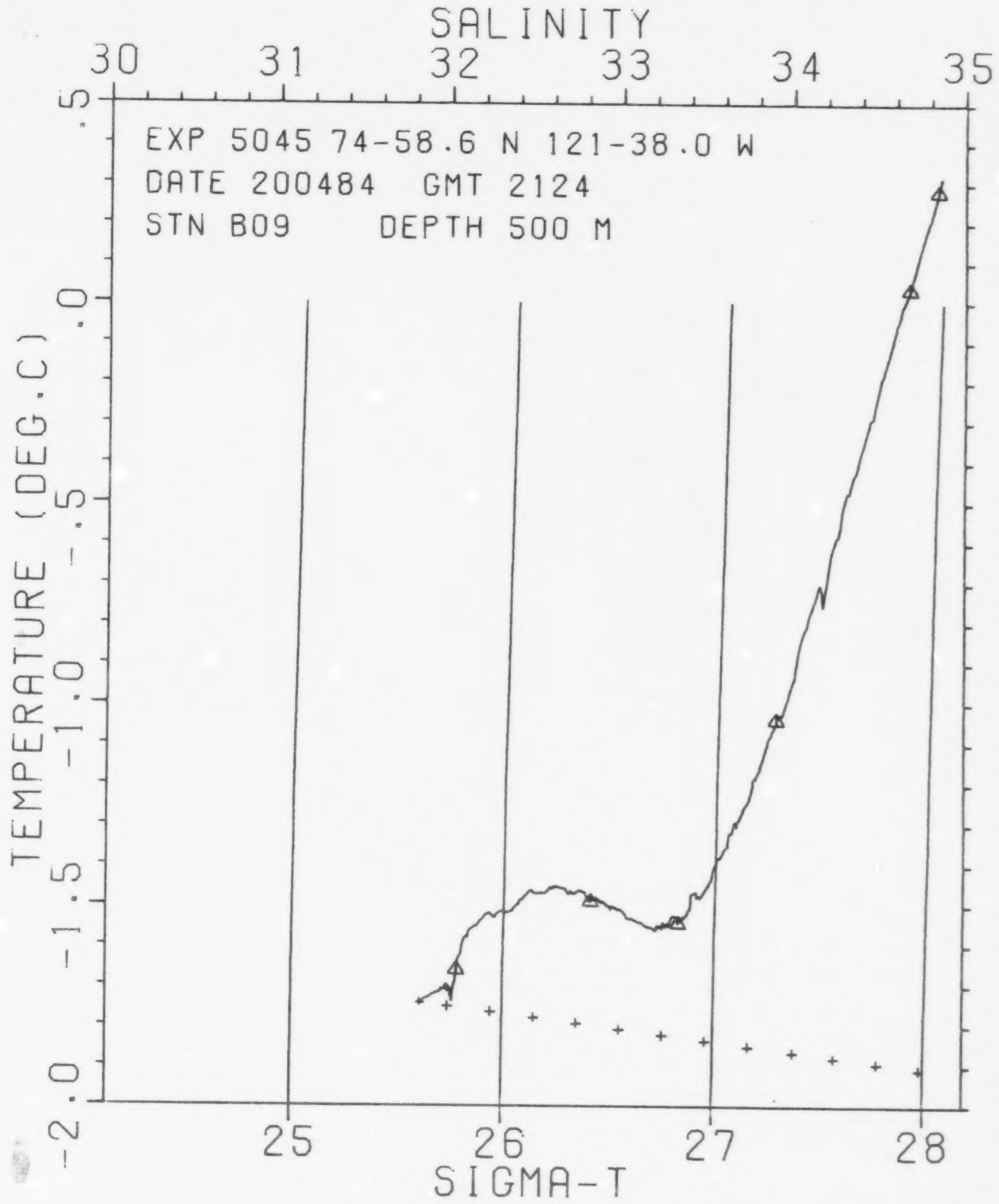
SIGMA-T


SALINITY
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EXP 5045 74-58.6 N 121-38.0 W
DATE 200484 GMT 2124
STN B09 DEPTH 500 M
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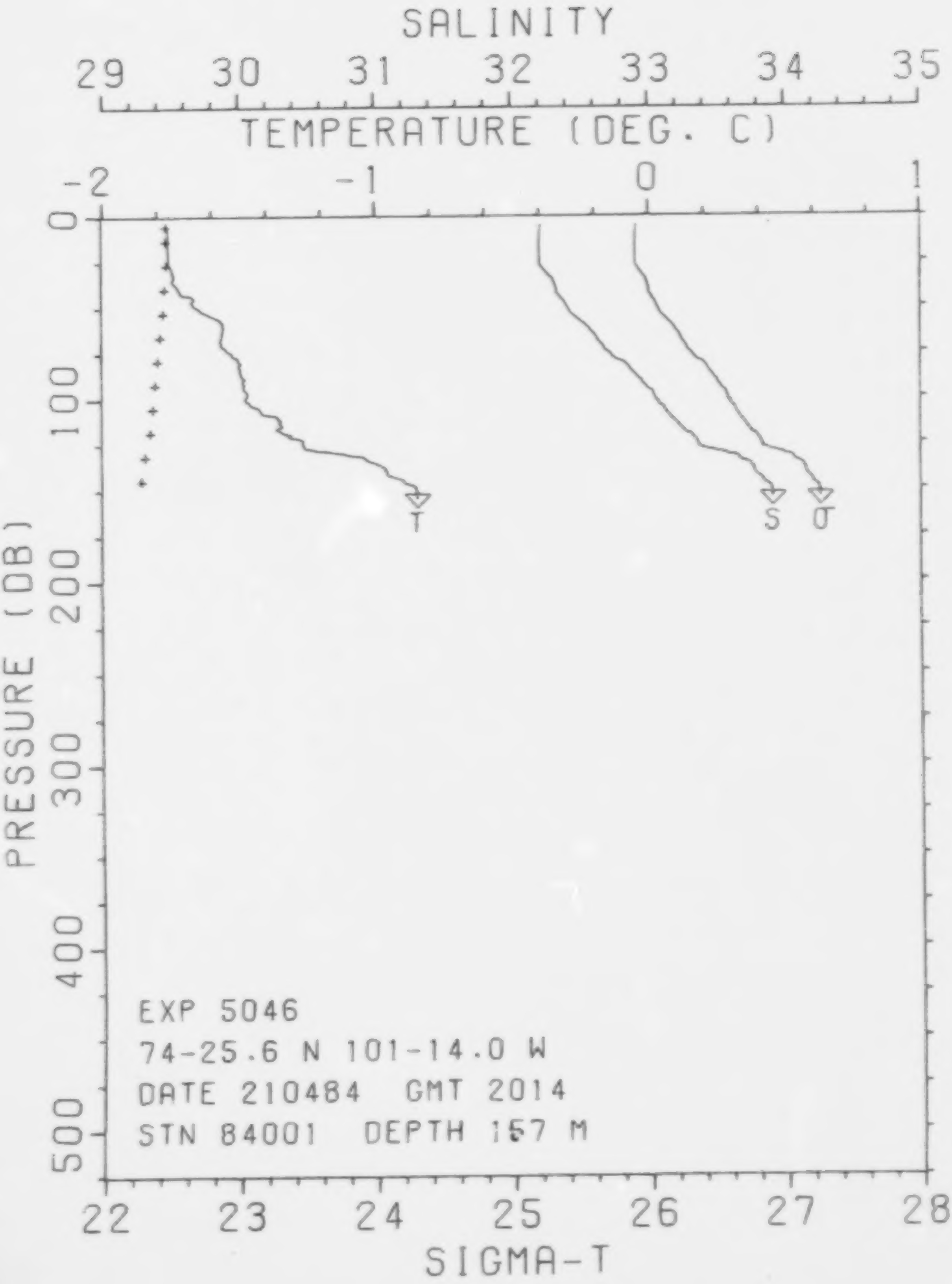
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5046
74-25.6 N 101-14.0 W
DATE 210484 GMT 2014
STN 84001 DEPTH 157 M
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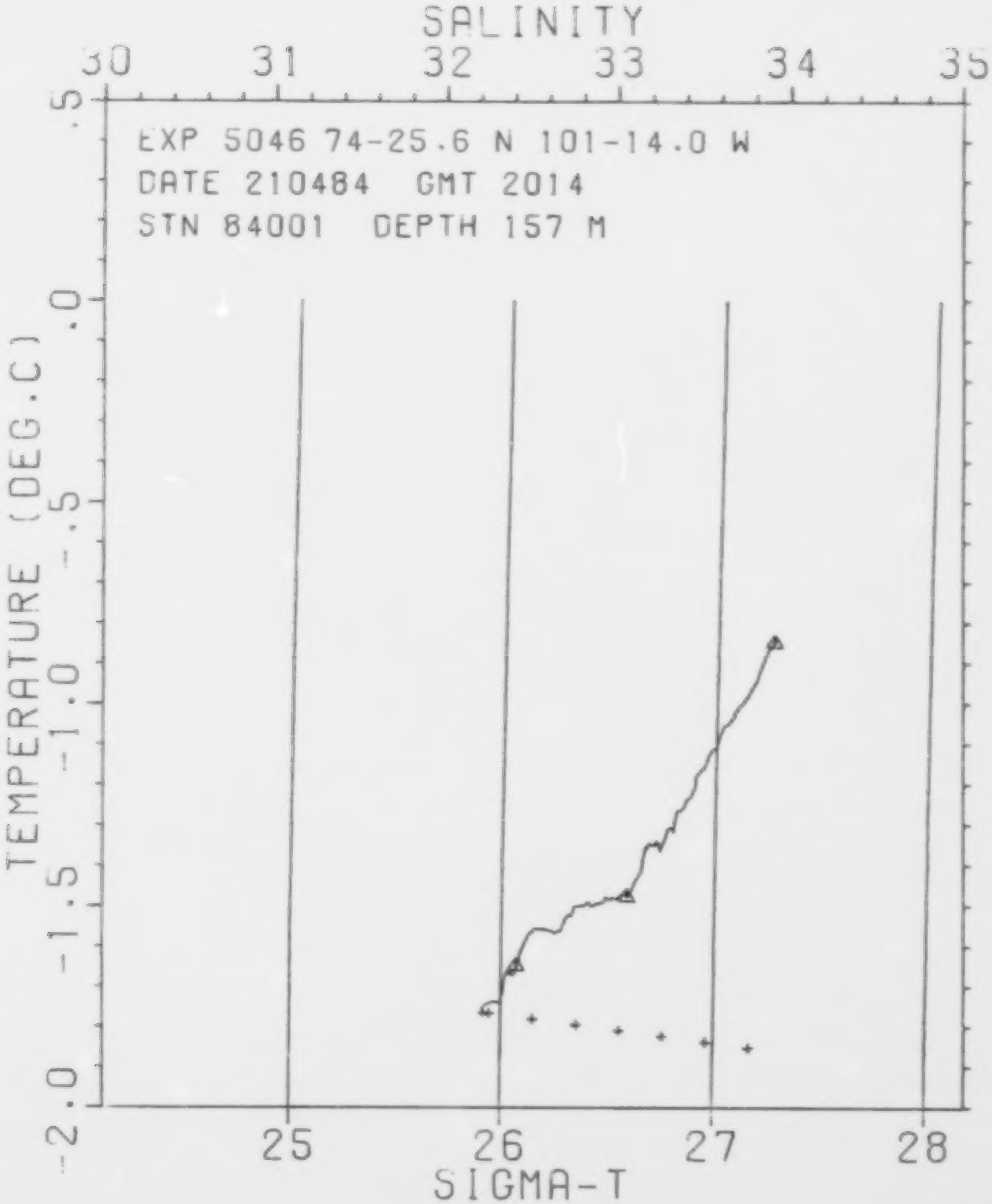
SIGMA-T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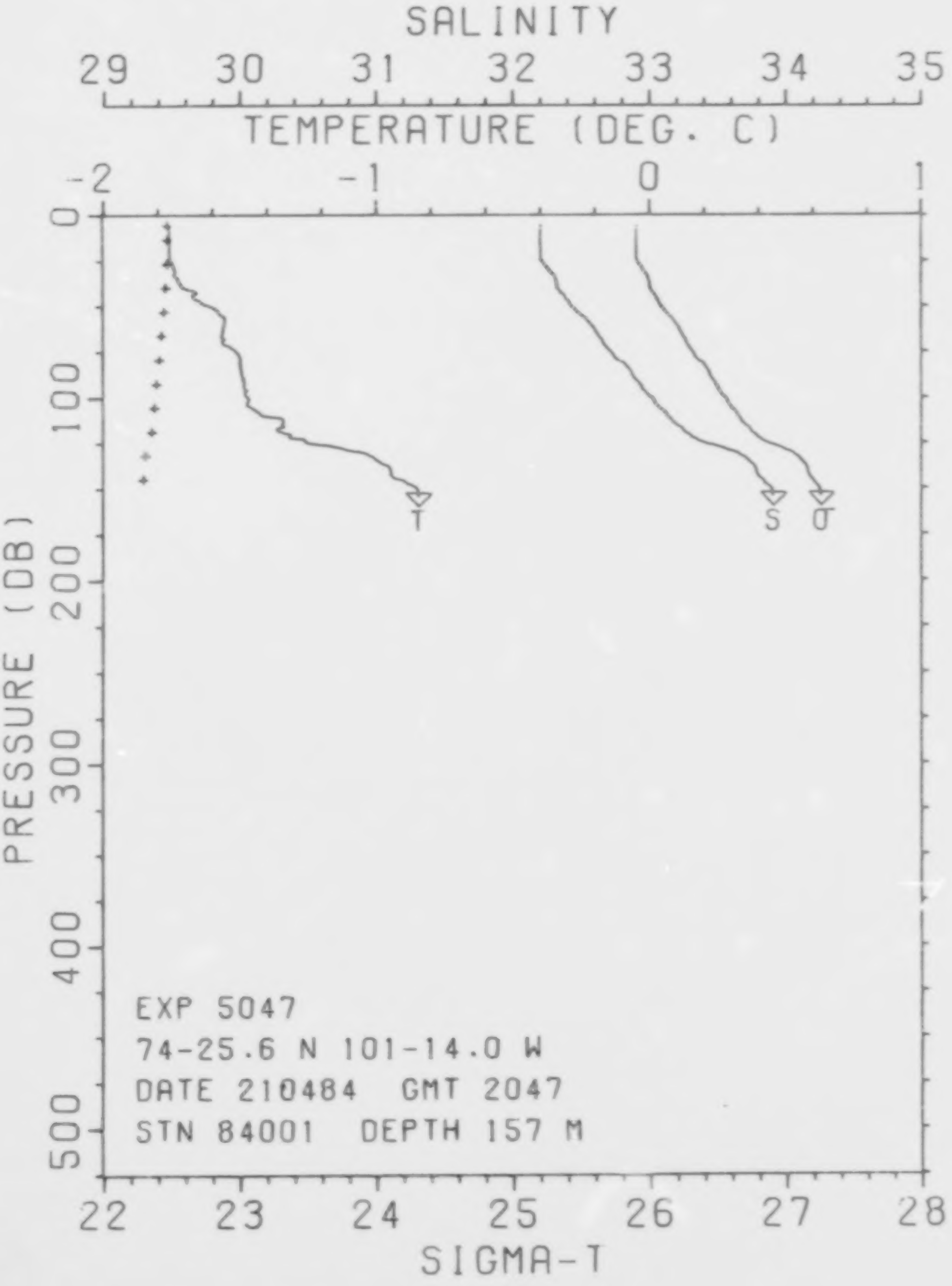

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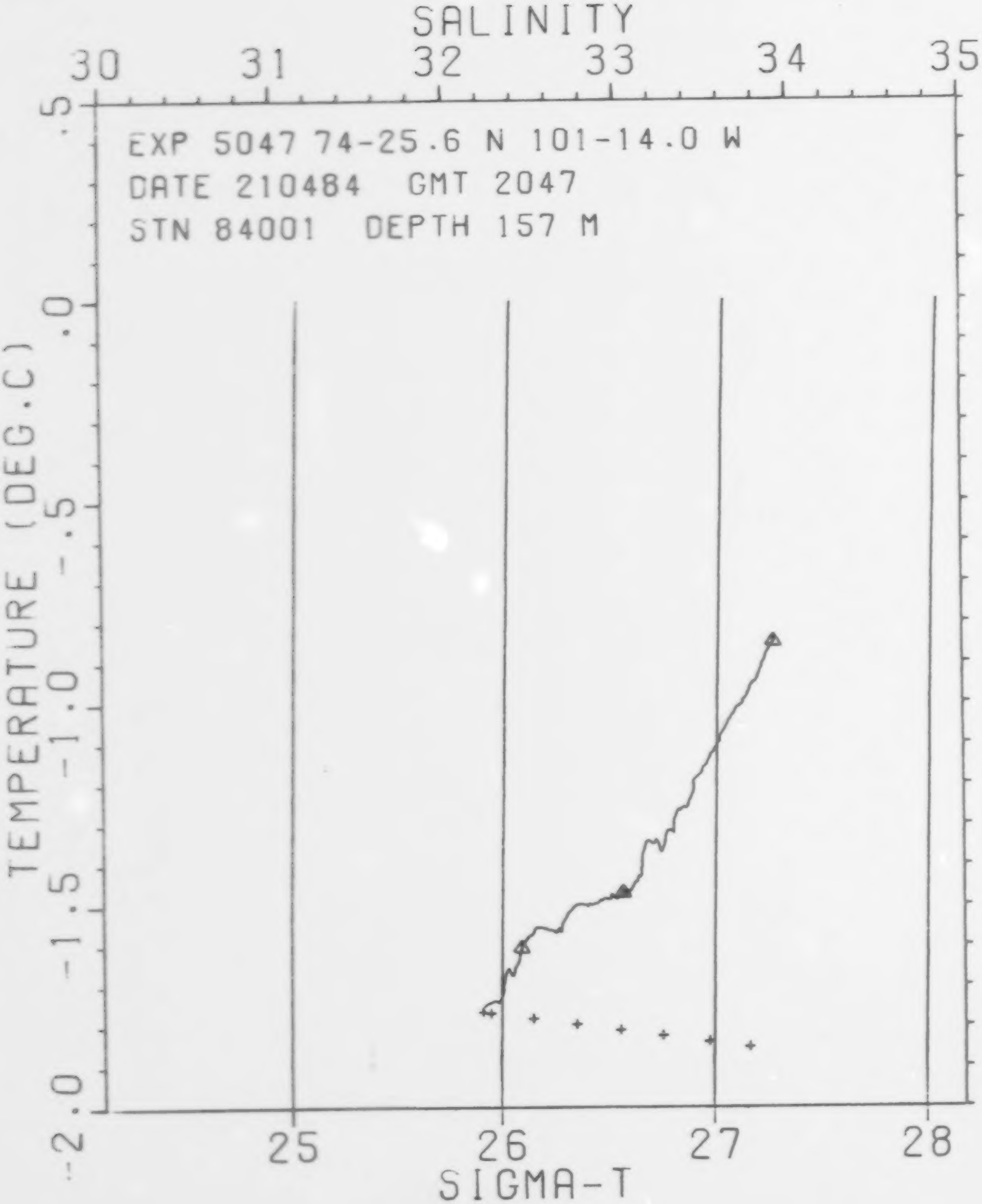
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STN 84001 DEPTH 157 M
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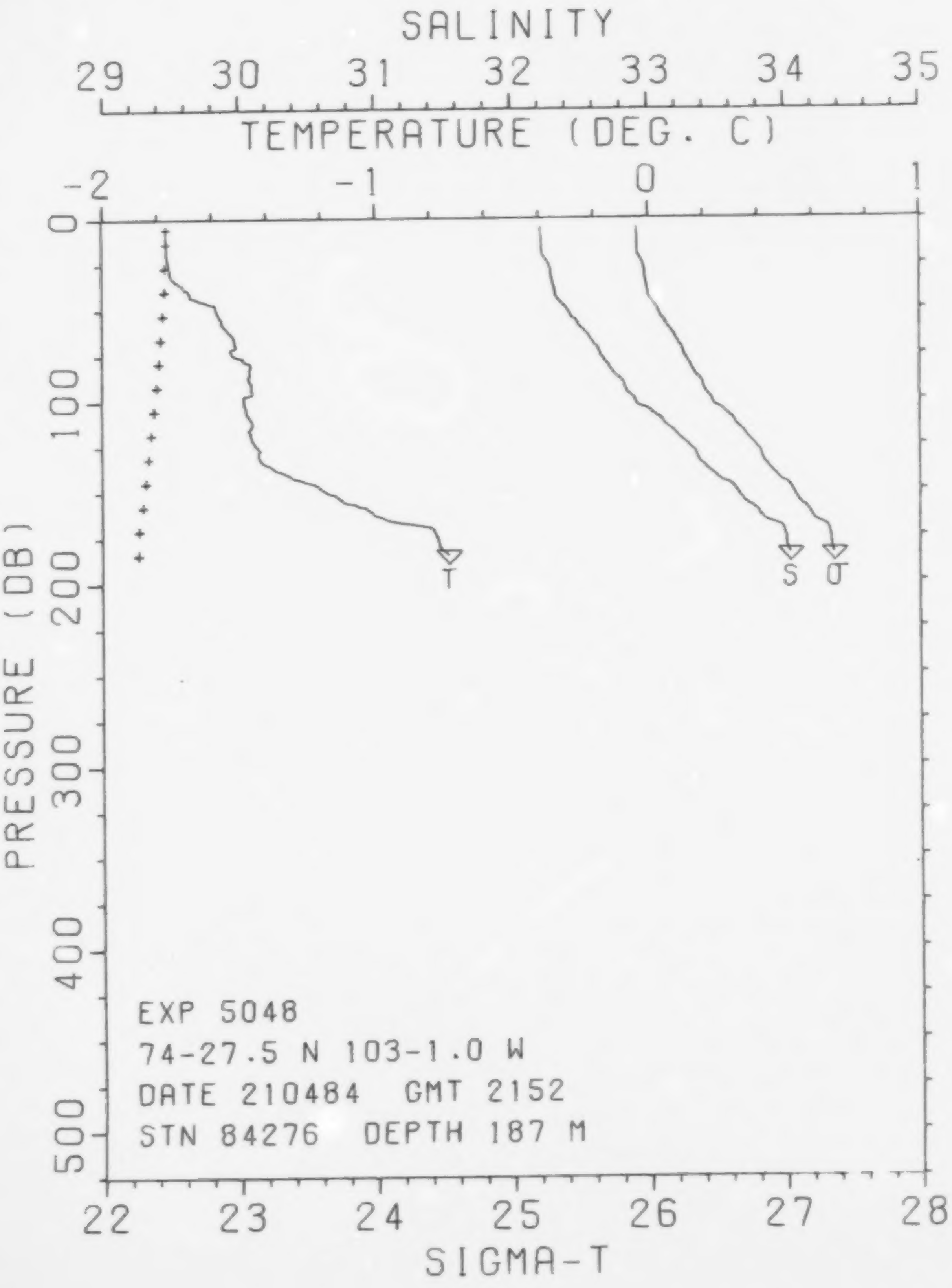
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EXP 5048
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DATE 210484 GMT 2152
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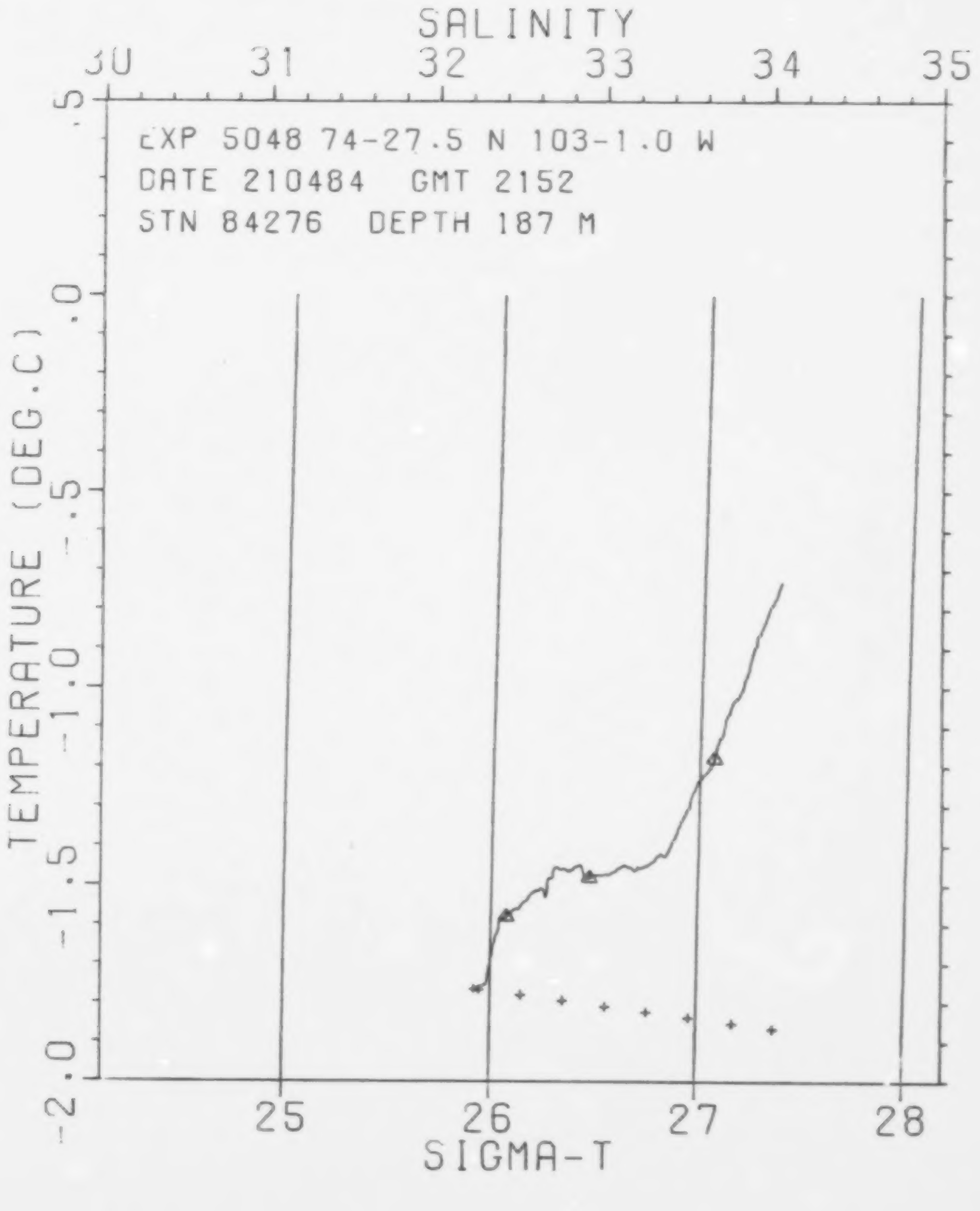
SIGMA-T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DATE 210484 GMT 2152
STN 84276 DEPTH 187 M
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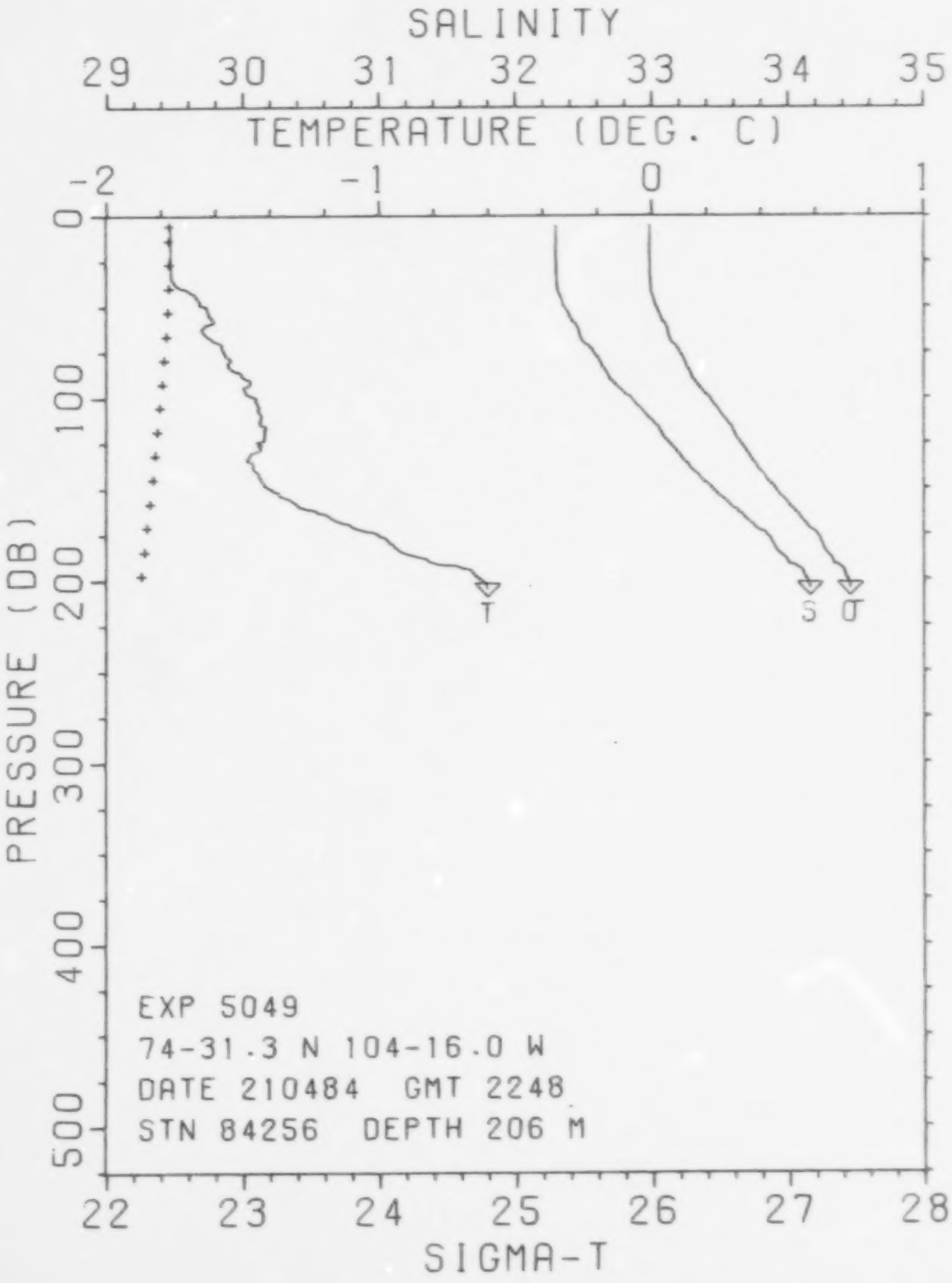
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PRESSURE (DB)
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EXP 5049
74-31.3 N 104-16.0 W
DATE 210484 GMT 2248
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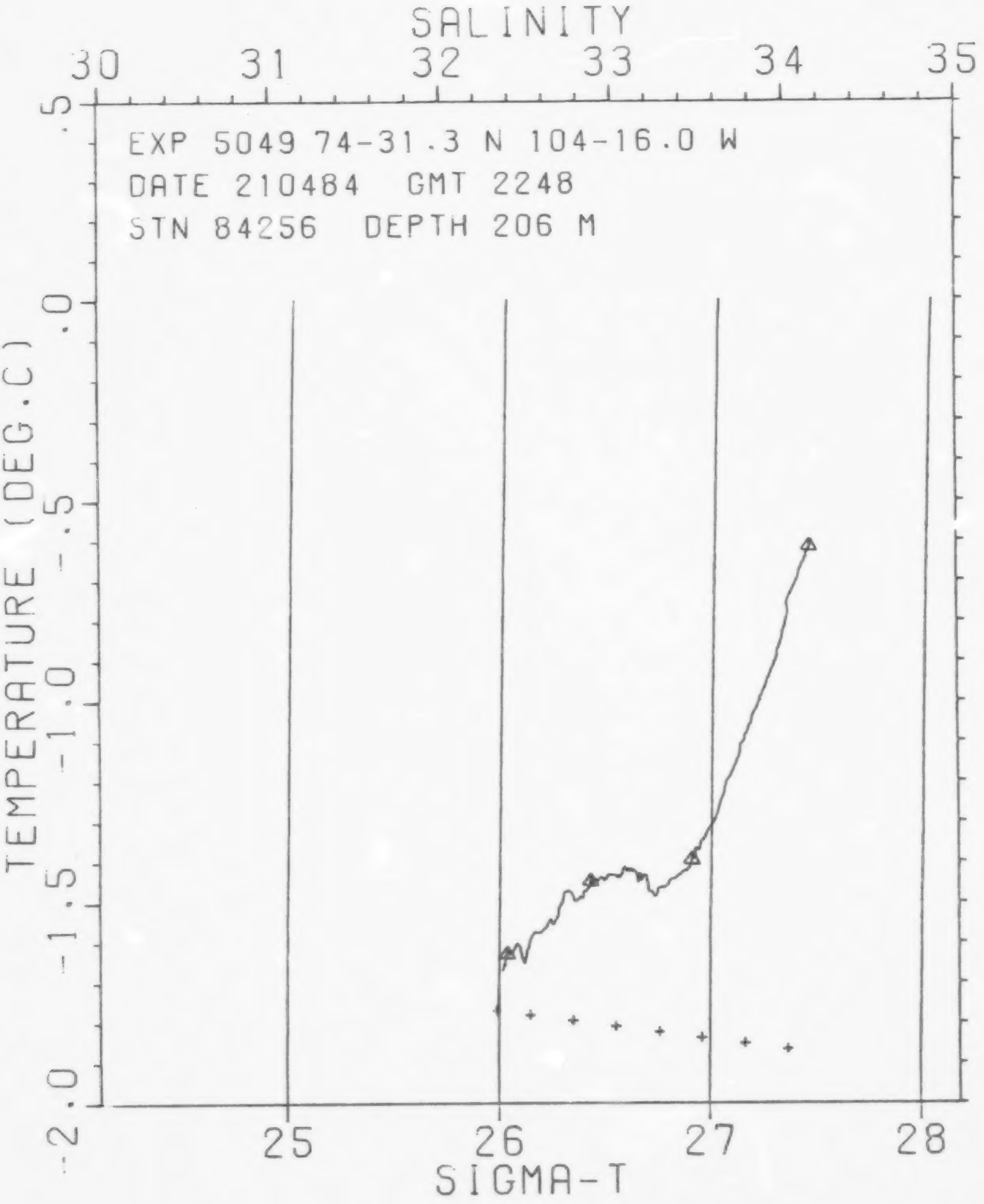
SIGMA-T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EXP 5049 74-31.3 N 104-16.0 W
DATE 210484 GMT 2248
STN 84256 DEPTH 206 M
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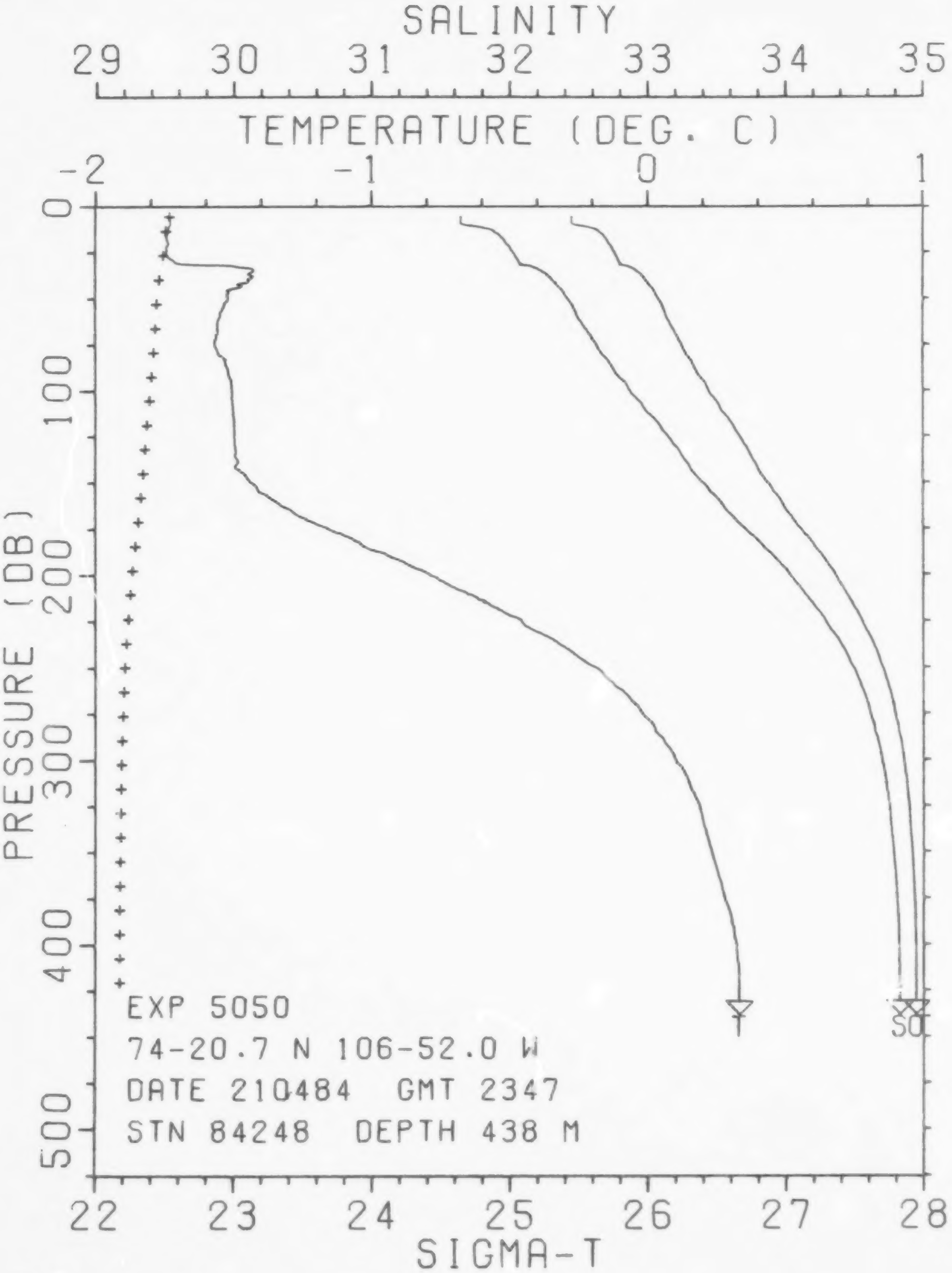
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PRESSURE (DB)
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EXP 5050
74-20.7 N 106-52.0 W
DATE 210484 GMT 2347
STN 84248 DEPTH 438 M
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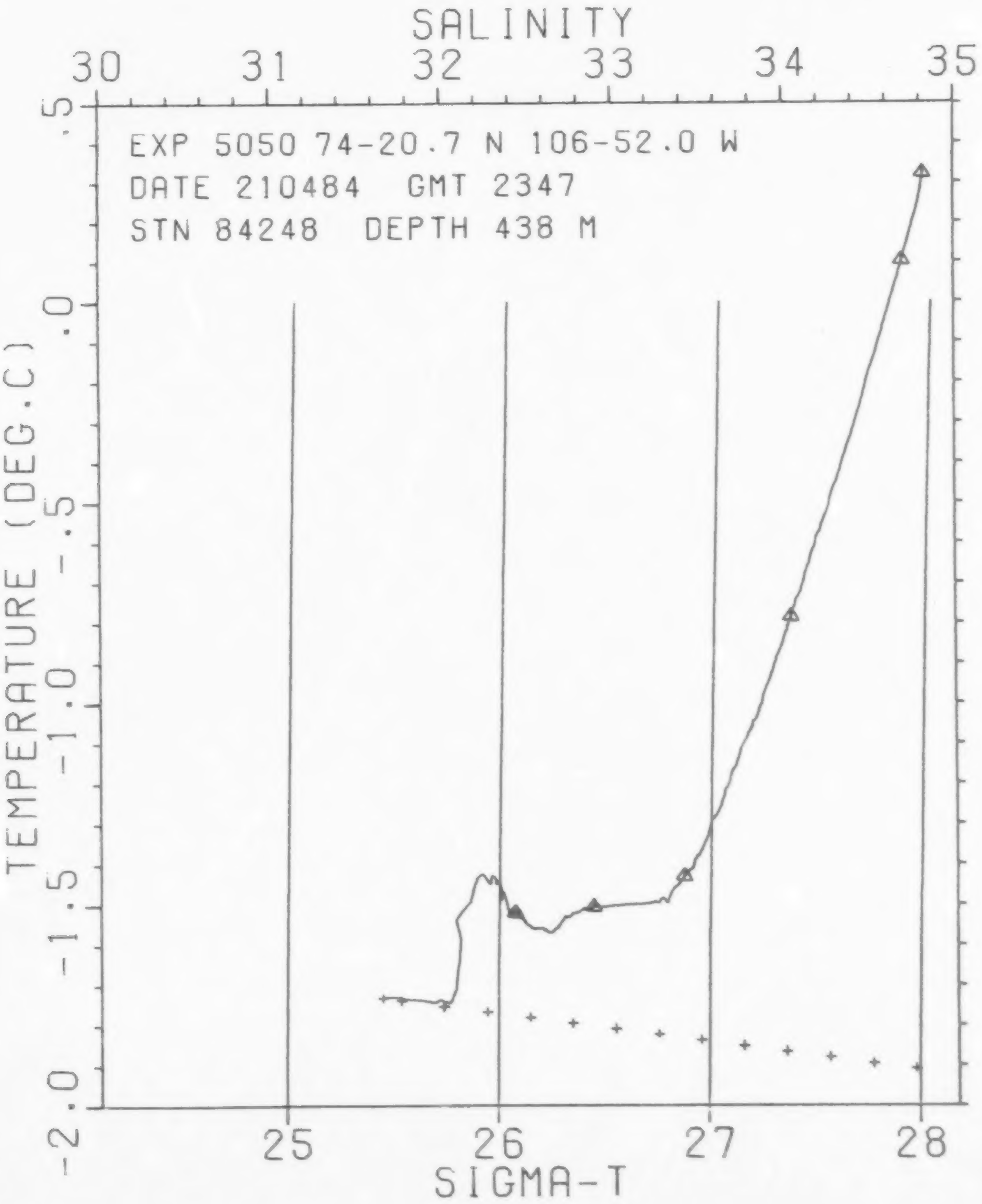
SIGMA-T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DATE 210484 GMT 2347
STN 84248 DEPTH 438 M
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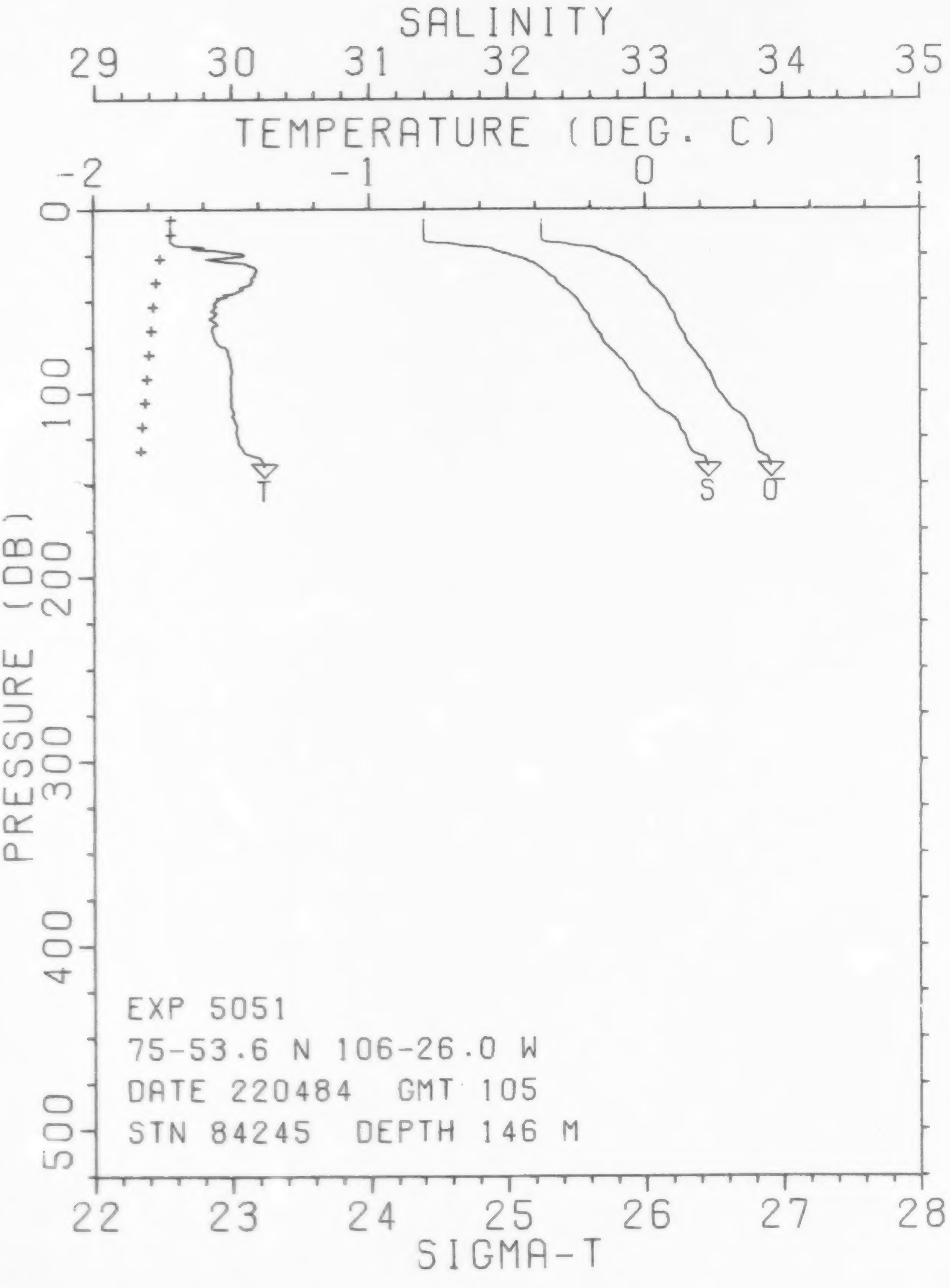
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5051
75-53.6 N 106-26.0 W
DATE 220484 GMT 105
STN 84245 DEPTH 146 M
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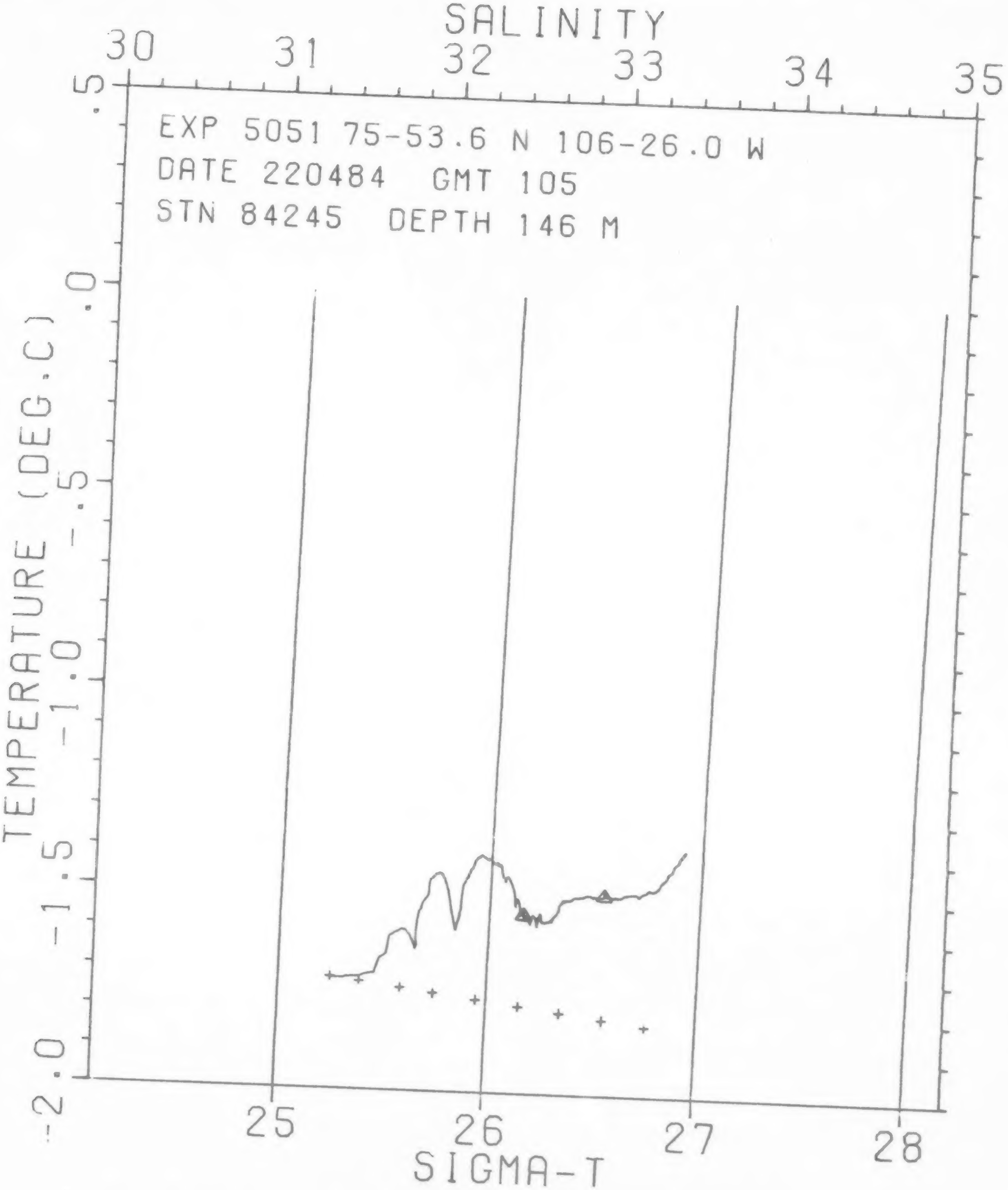
SIGMA-T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DATE 220484 GMT 105
STN 84245 DEPTH 146 M
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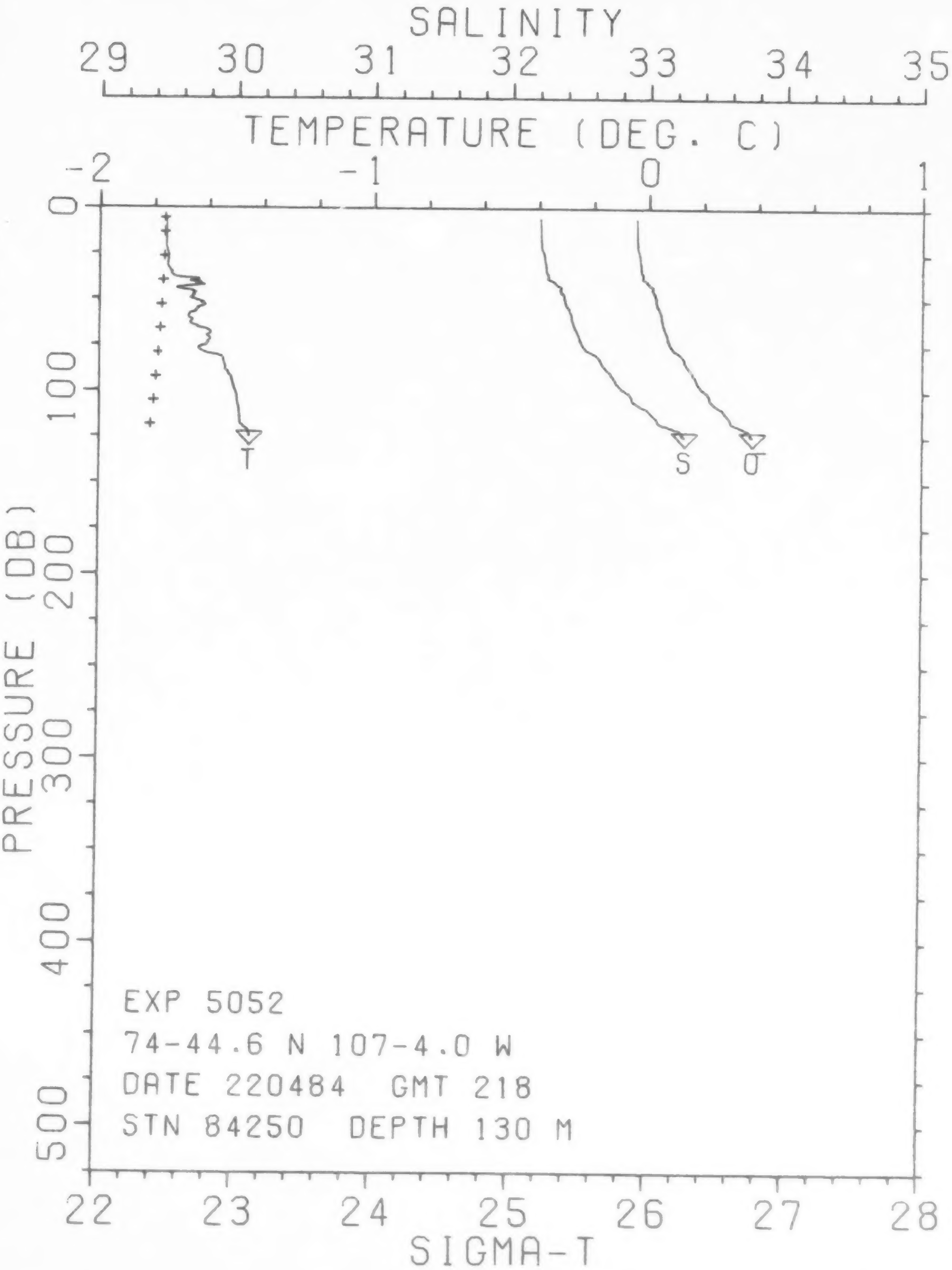
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PRESSURE (DB)
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EXP 5052
74-44.6 N 107-4.0 W
DATE 220484 GMT 218
STN 84250 DEPTH 130 M
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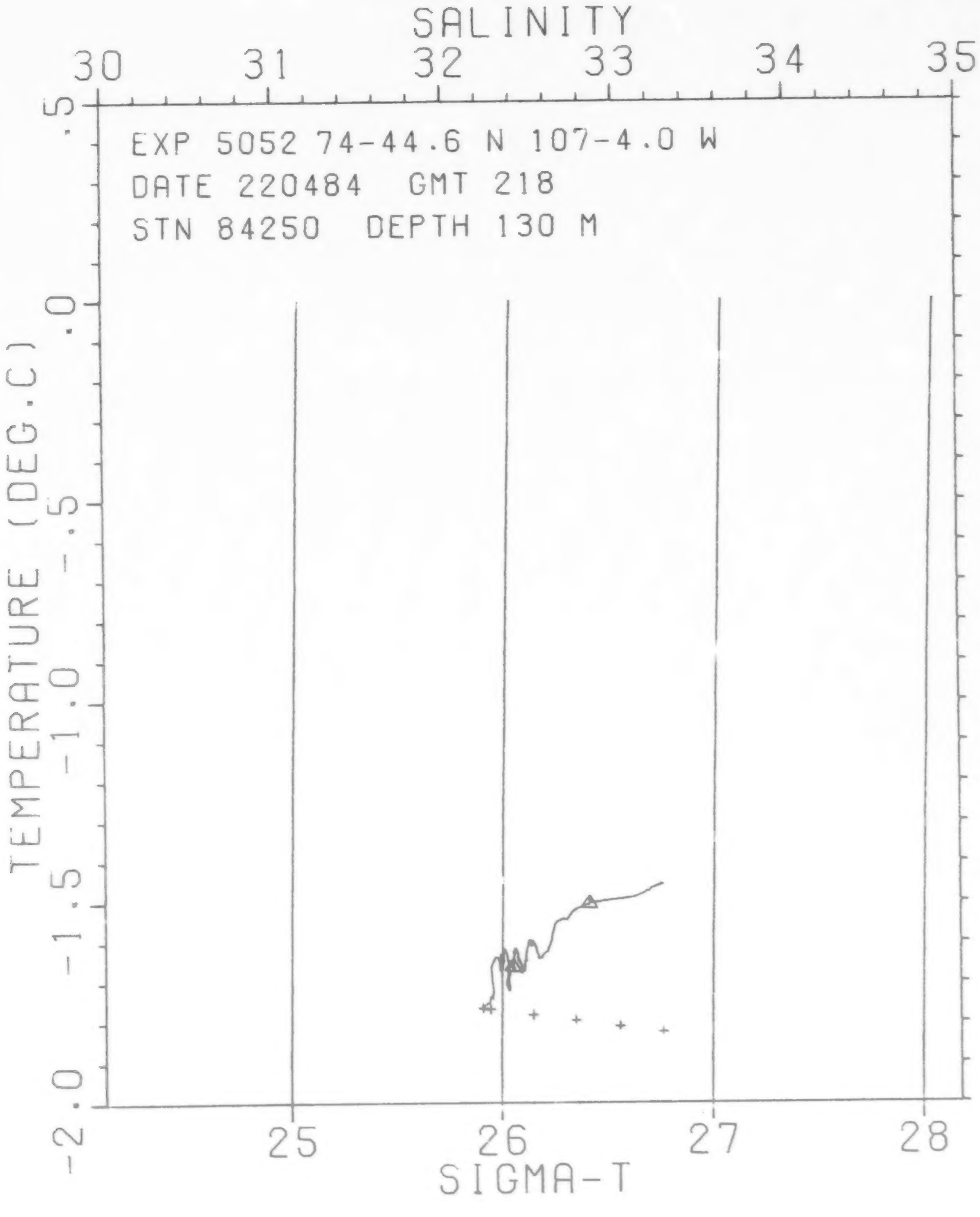
SIGMA-T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EXP 5052 74-44.6 N 107-4.0 W
DATE 220484 GMT 218
STN 84250 DEPTH 130 M
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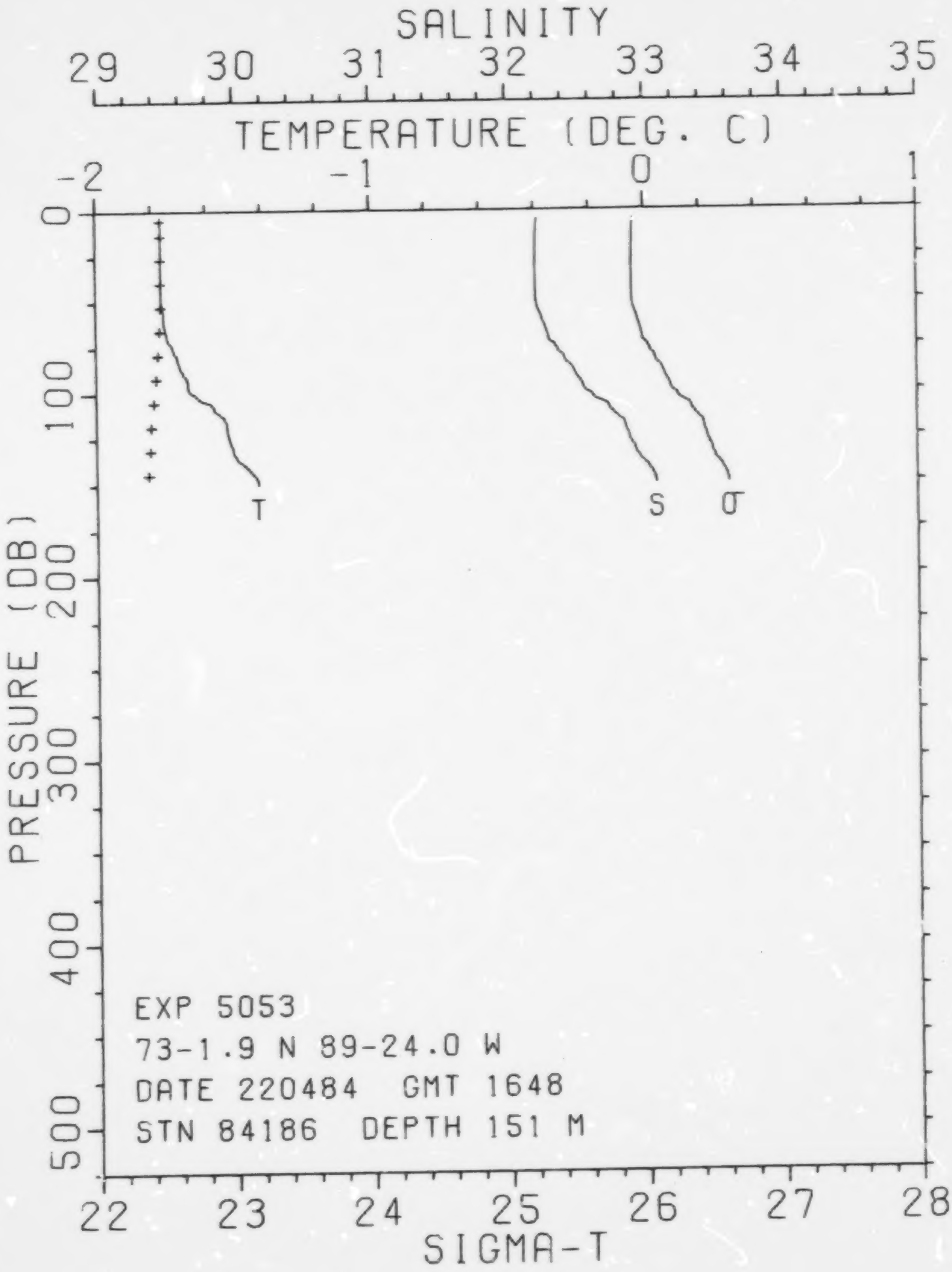
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TEMPERATURE (DEG. C)
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PRESSURE (DB)
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EXP 5053
73-1.9 N 89-24.0 W
DATE 220484 GMT 1648
STN 84186 DEPTH 151 M
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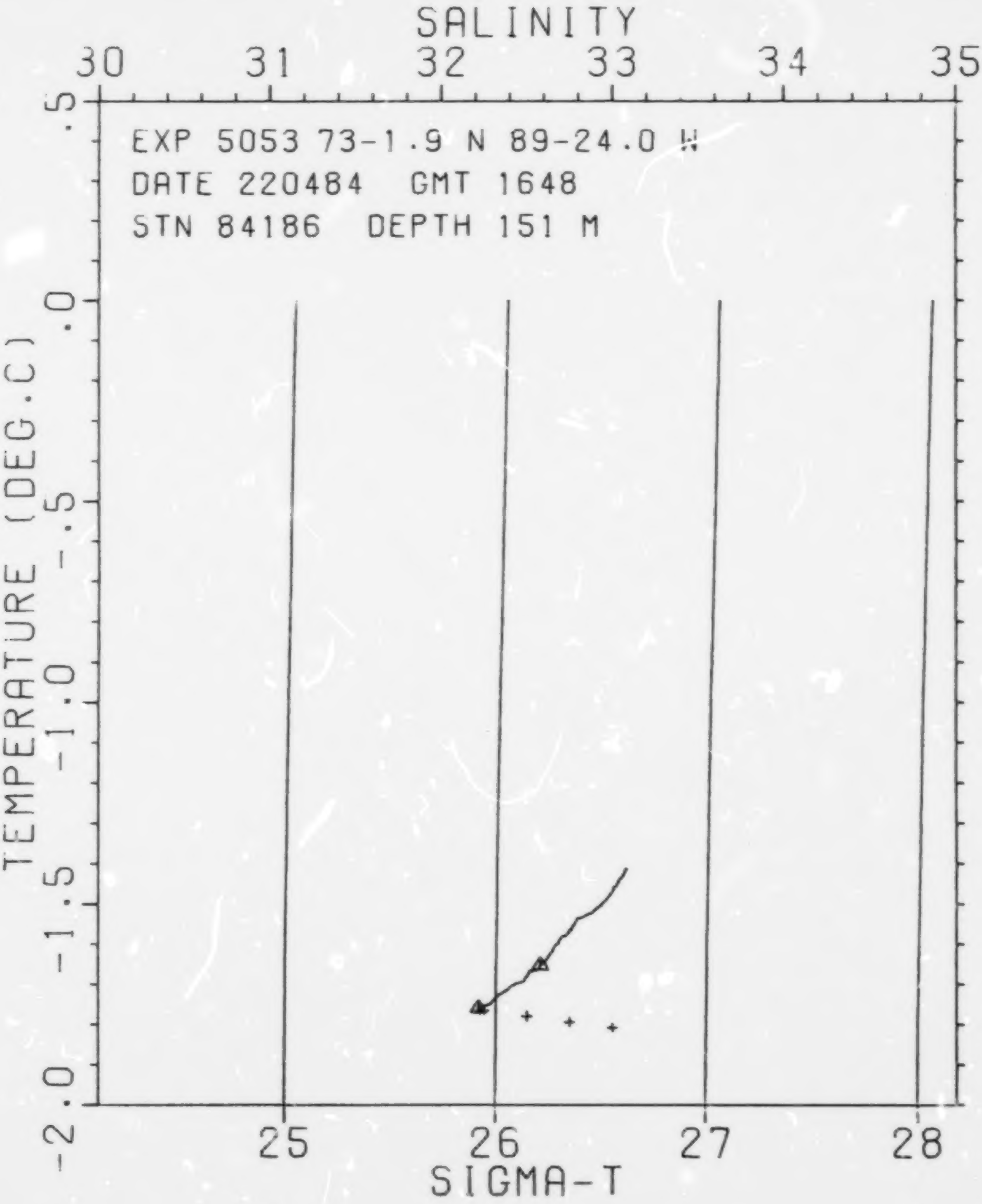
SIGMA-T


SALINITY
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EXP 5053 73-1.9 N 89-24.0 W
DATE 220484 GMT 1648
STN 84186 DEPTH 151 M
TEMPERATURE (DEG.C)
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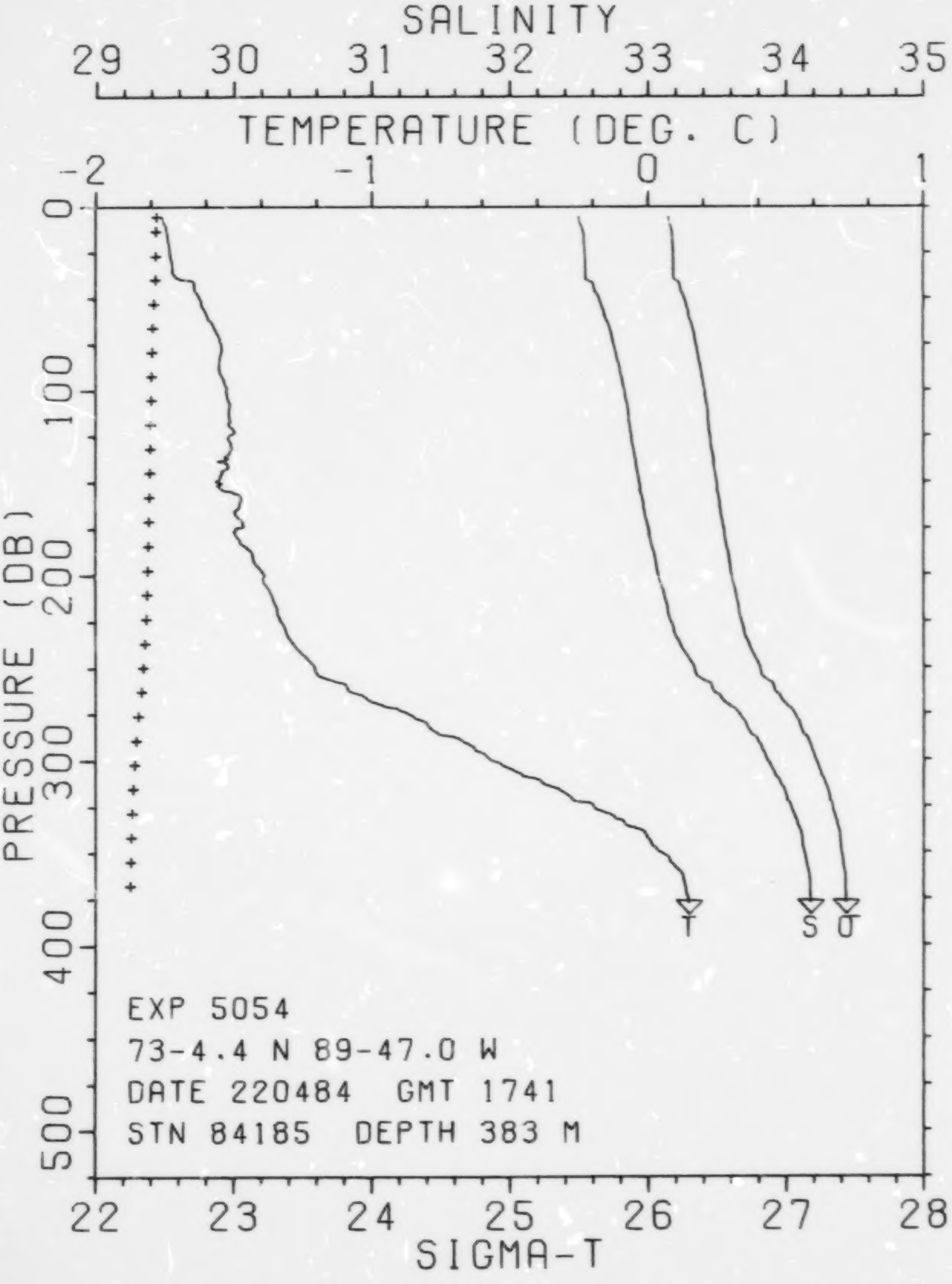
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PRESSURE (DB)
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EXP 5054
73-4.4 N 89-47.0 W
DATE 220484 GMT 1741
STN 84185 DEPTH 383 M
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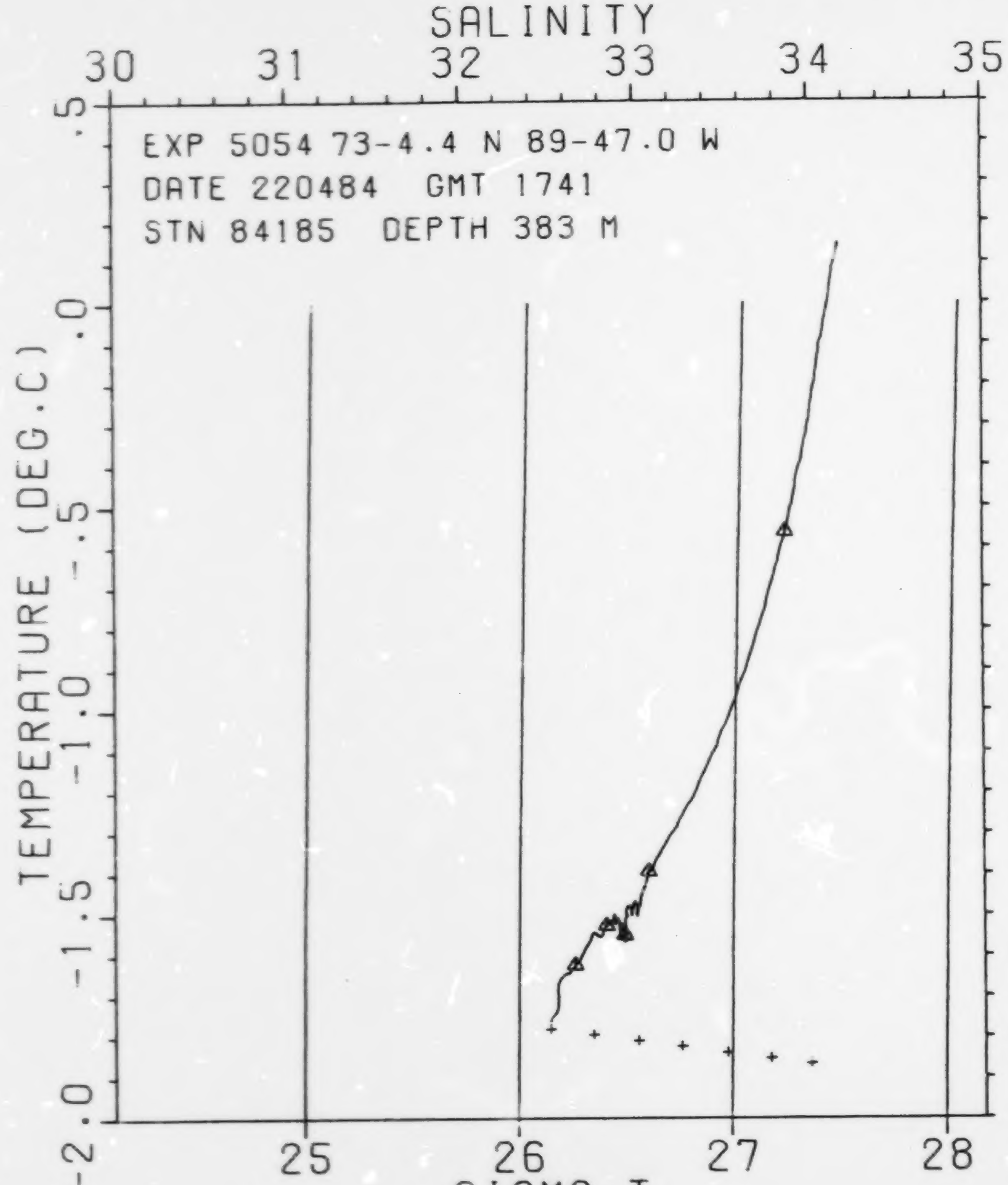
SIGMA-T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EXP 5054 73-4.4 N 89-47.0 W
DATE 220484 GMT 1741
STN 84185 DEPTH 383 M
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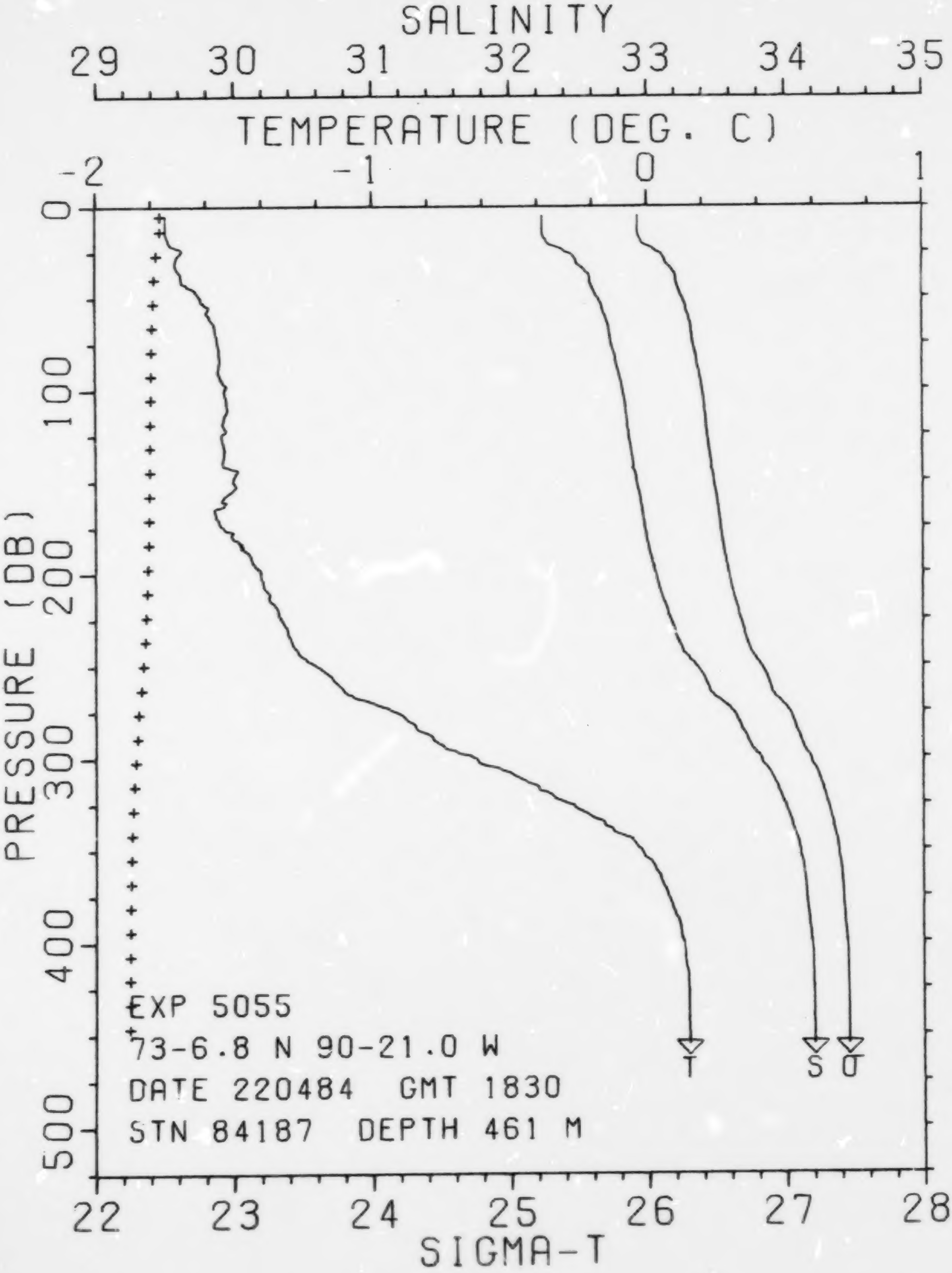
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PRESSURE (DB)
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EXP 5055
73-6.8 N 90-21.0 W
DATE 220484 GMT 1830
STN 84187 DEPTH 461 M
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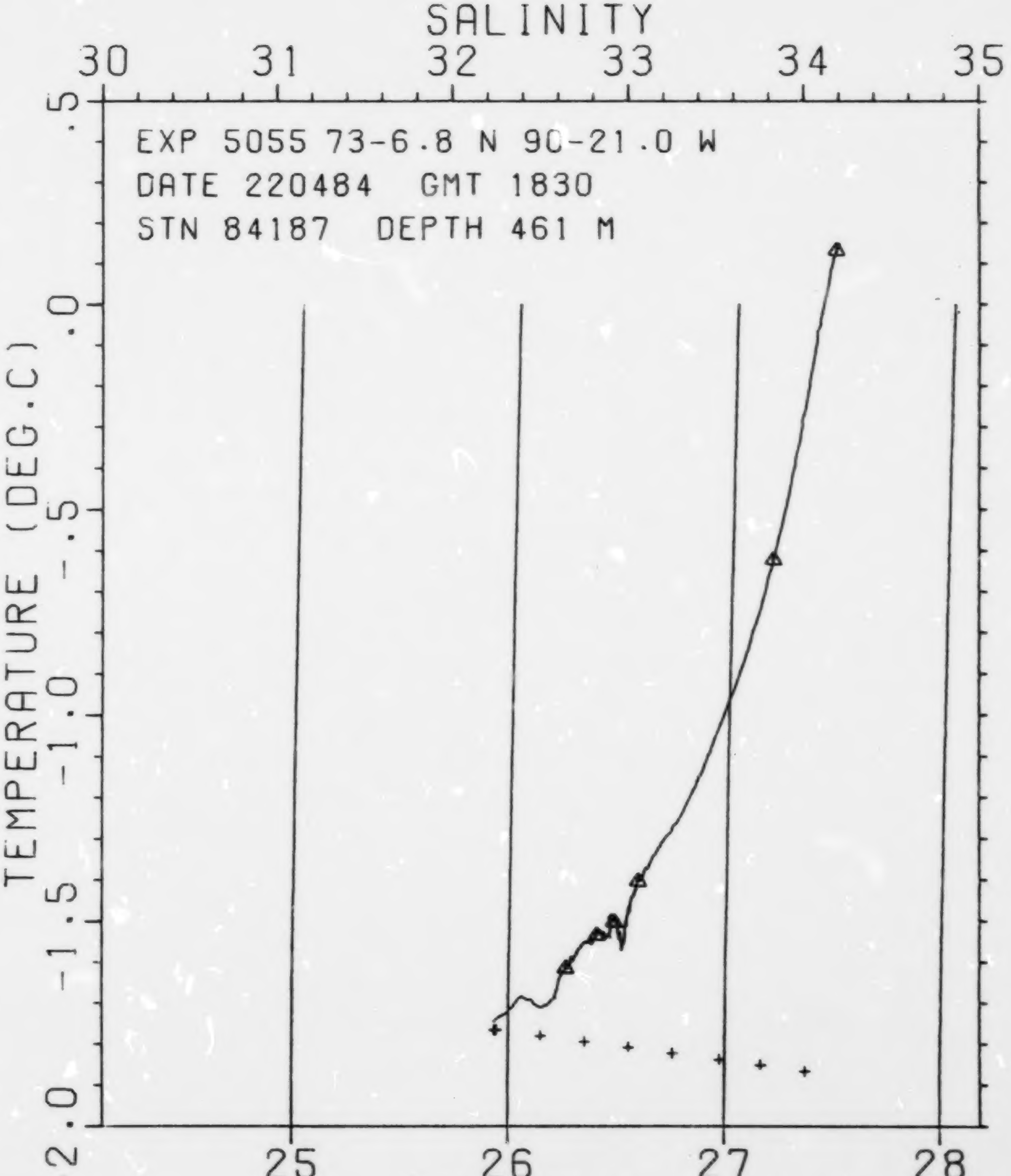
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EXP 5055 73-6.8 N 90-21.0 W
DATE 220484 GMT 1830
STN 84187 DEPTH 461 M
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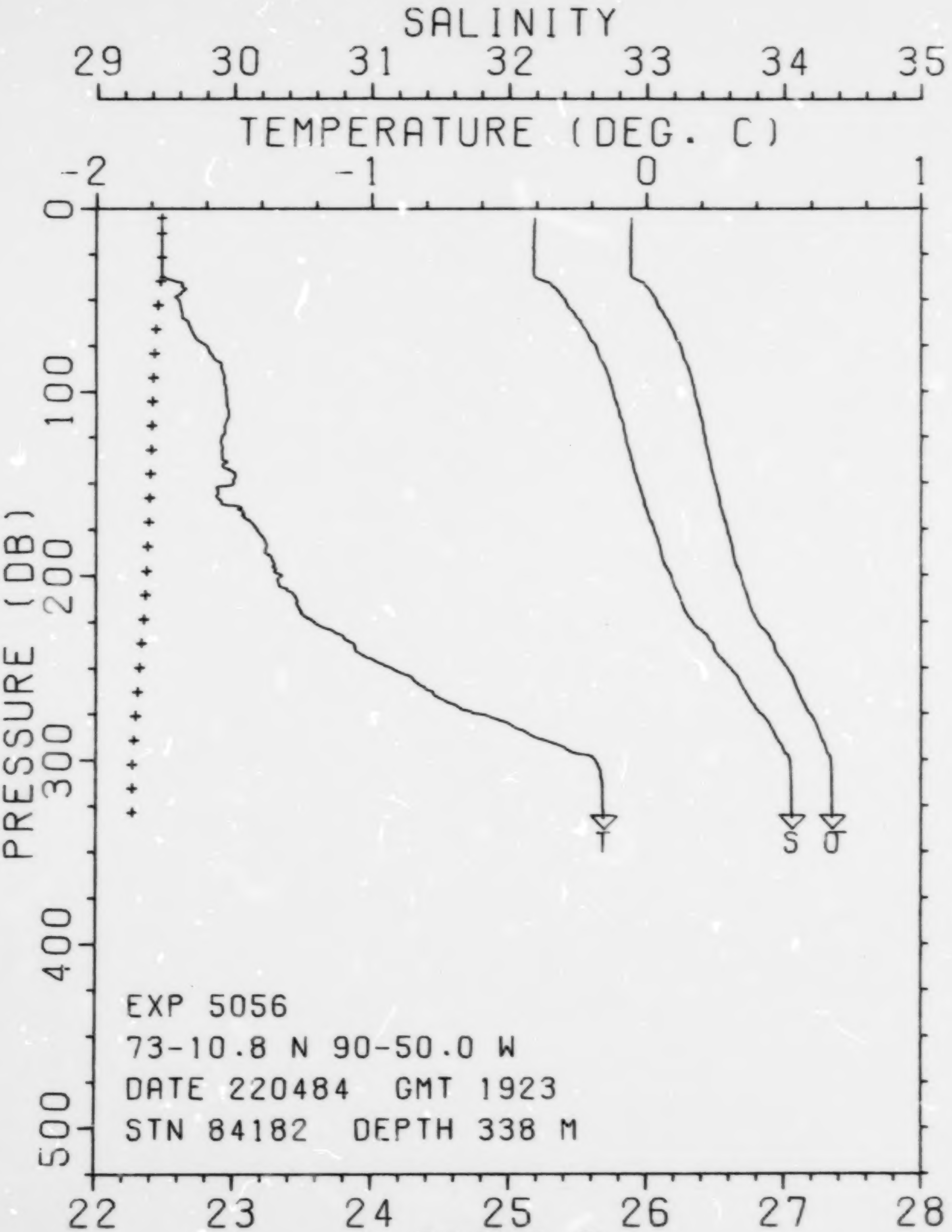
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PRESSURE (DB)
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EXP 5056
73-10.8 N 90-50.0 W
DATE 220484 GMT 1923
STN 84182 DEPTH 338 M
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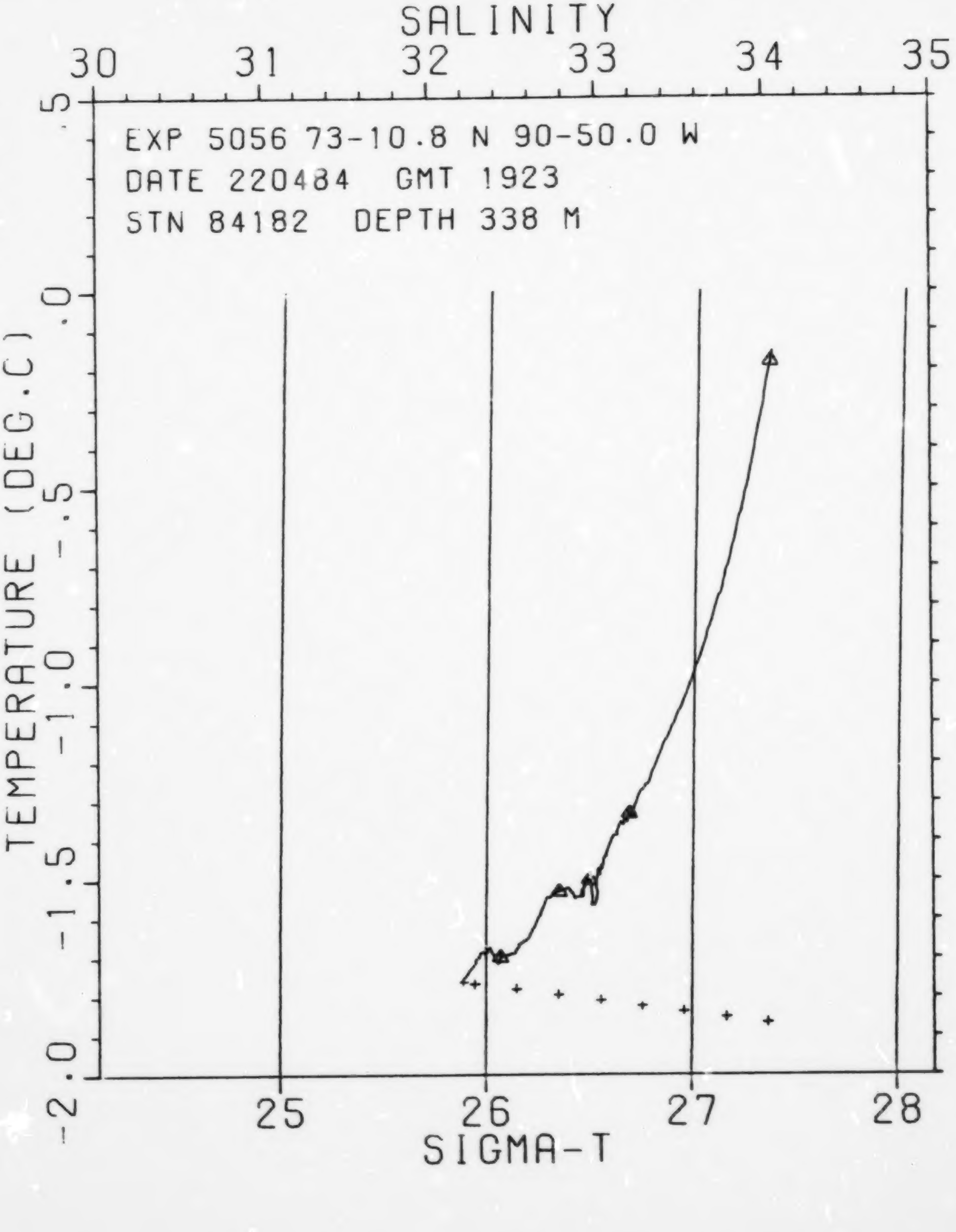
SIGMA-T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EXP 5056 73-10.8 N 90-50.0 W
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STN 84182 DEPTH 338 M
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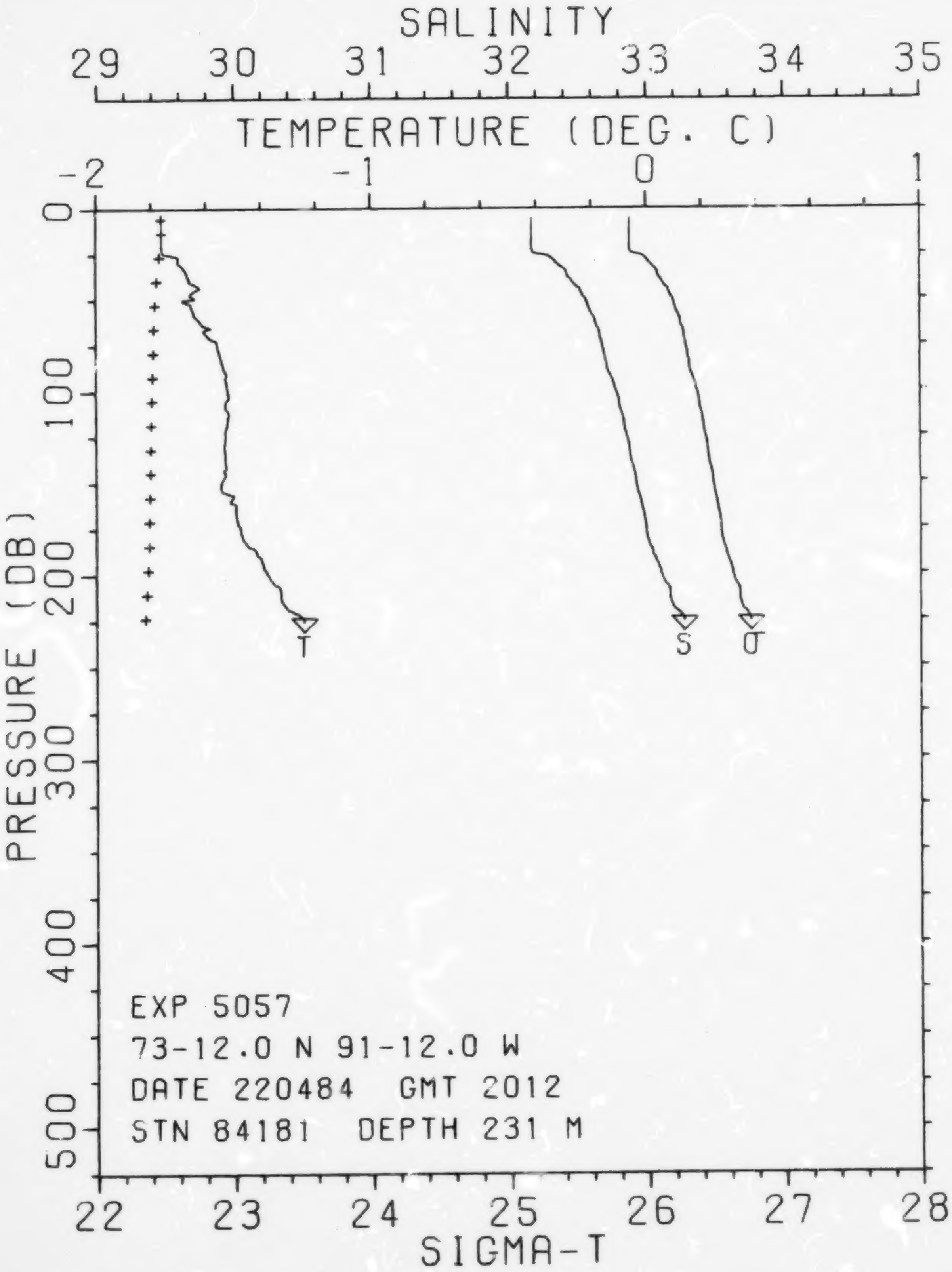
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PRESSURE (DB)
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EXP 5057
73-12.0 N 91-12.0 W
DATE 220484 GMT 2012
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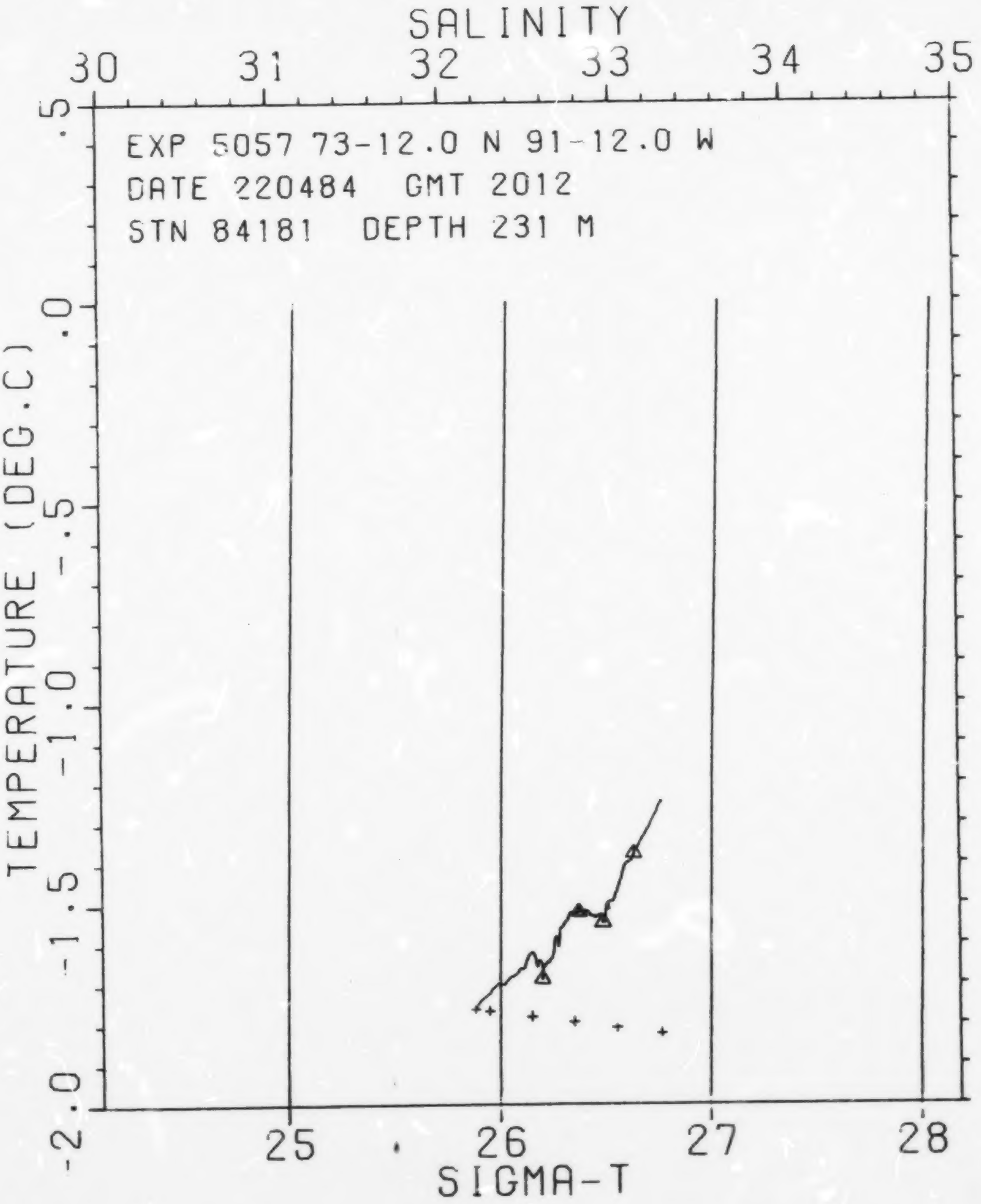
SIGMA-T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EXP 5057 73-12.0 N 91-12.0 W
DATE 220484 GMT 2012
STN 84181 DEPTH 231 M
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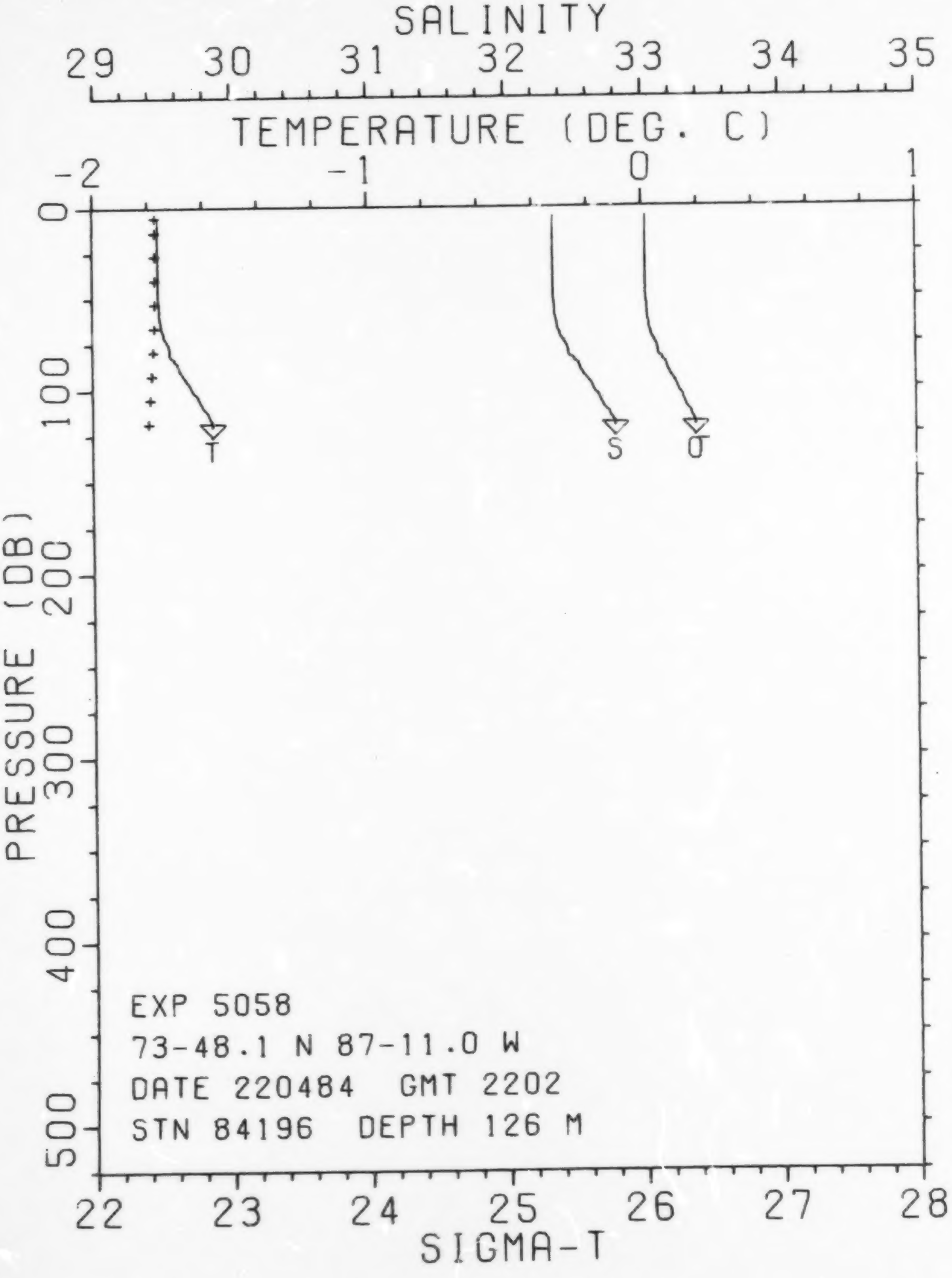
SIGMA-T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PRESSURE (DB)
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EXP 5058
73-48.1 N 87-11.0 W
DATE 220484 GMT 2202
STN 84196 DEPTH 126 M
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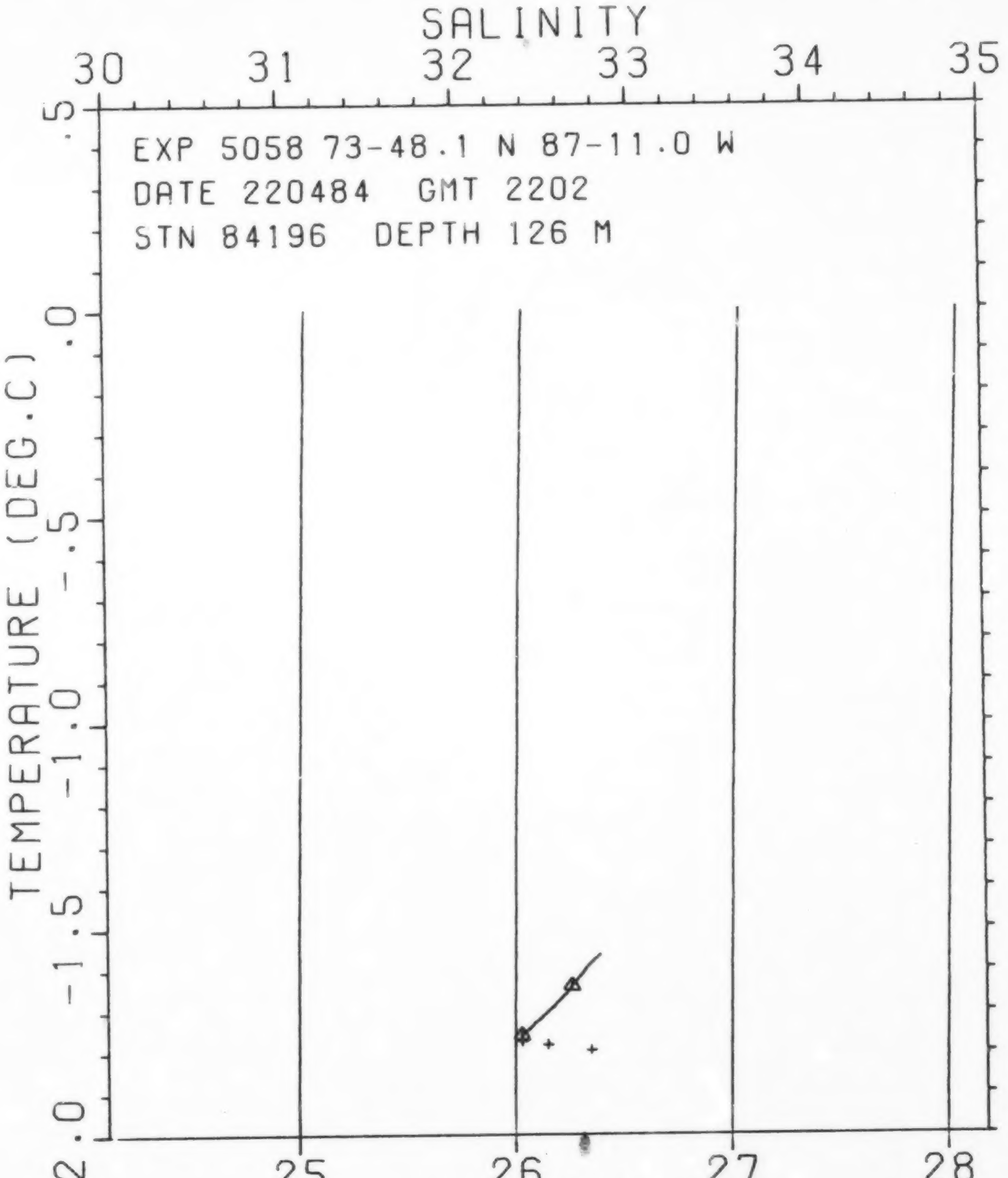
SIGMA-T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EXP 5058 73-48.1 N 87-11.0 W
DATE 220484 GMT 2202
STN 84196 DEPTH 126 M
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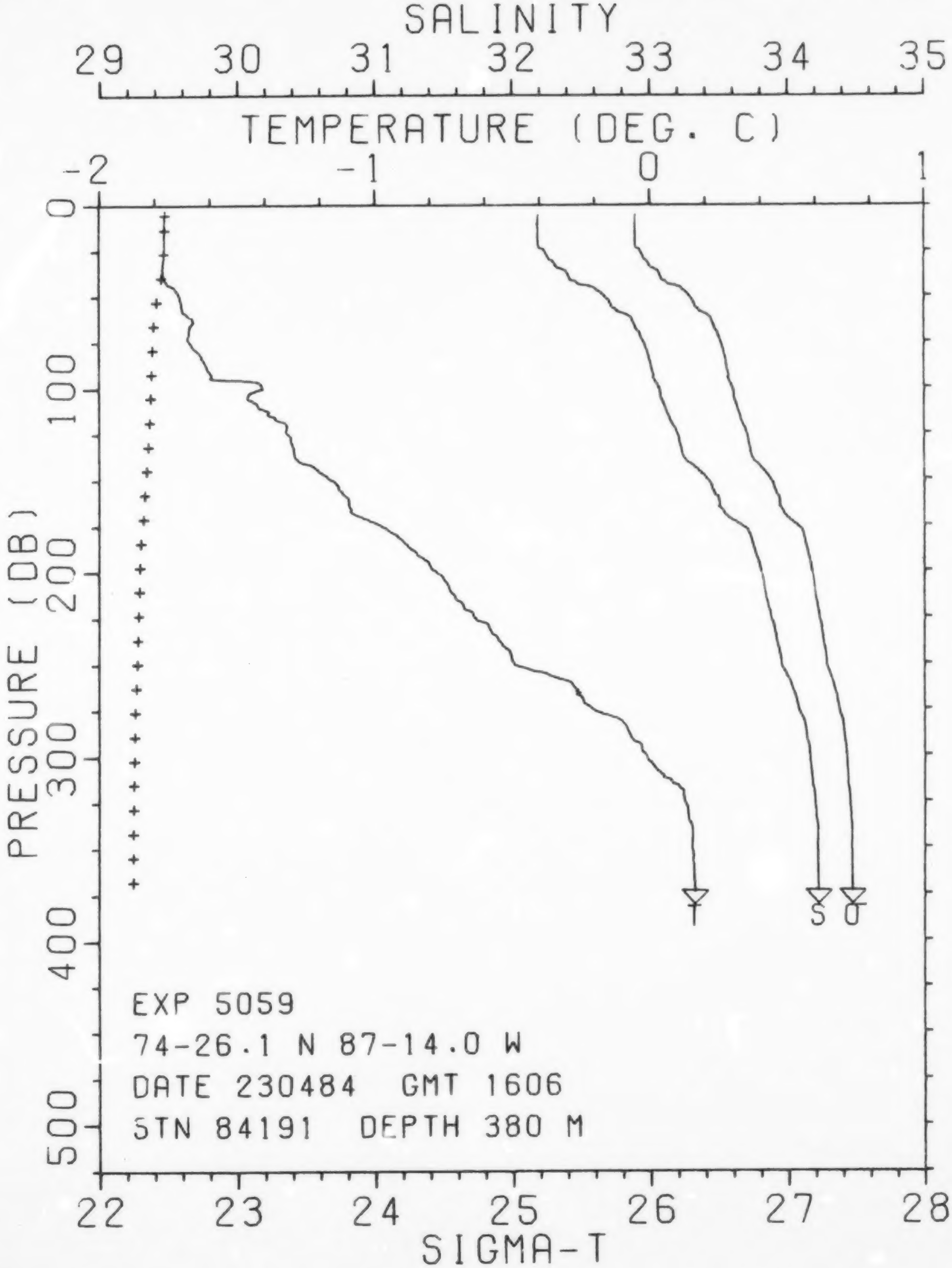
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PRESSURE (DB)
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SIGMA-T
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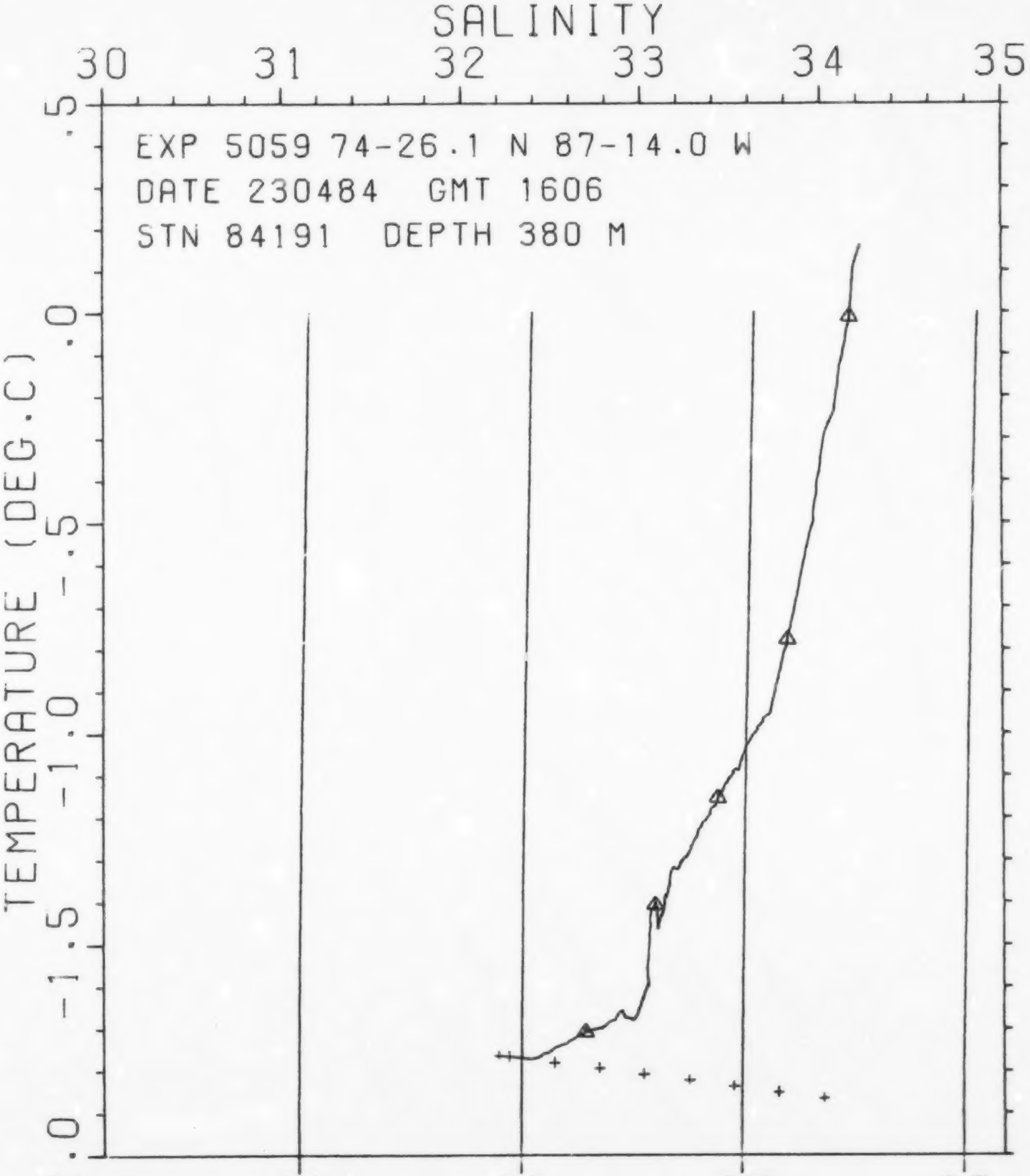
EXP 5059
74-26.1 N 87-14.0 W
DATE 230484 GMT 1606
STN 84191 DEPTH 380 M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EXP 5059 74-26.1 N 87-14.0 W
DATE 230484 GMT 1606
STN 84191 DEPTH 380 M
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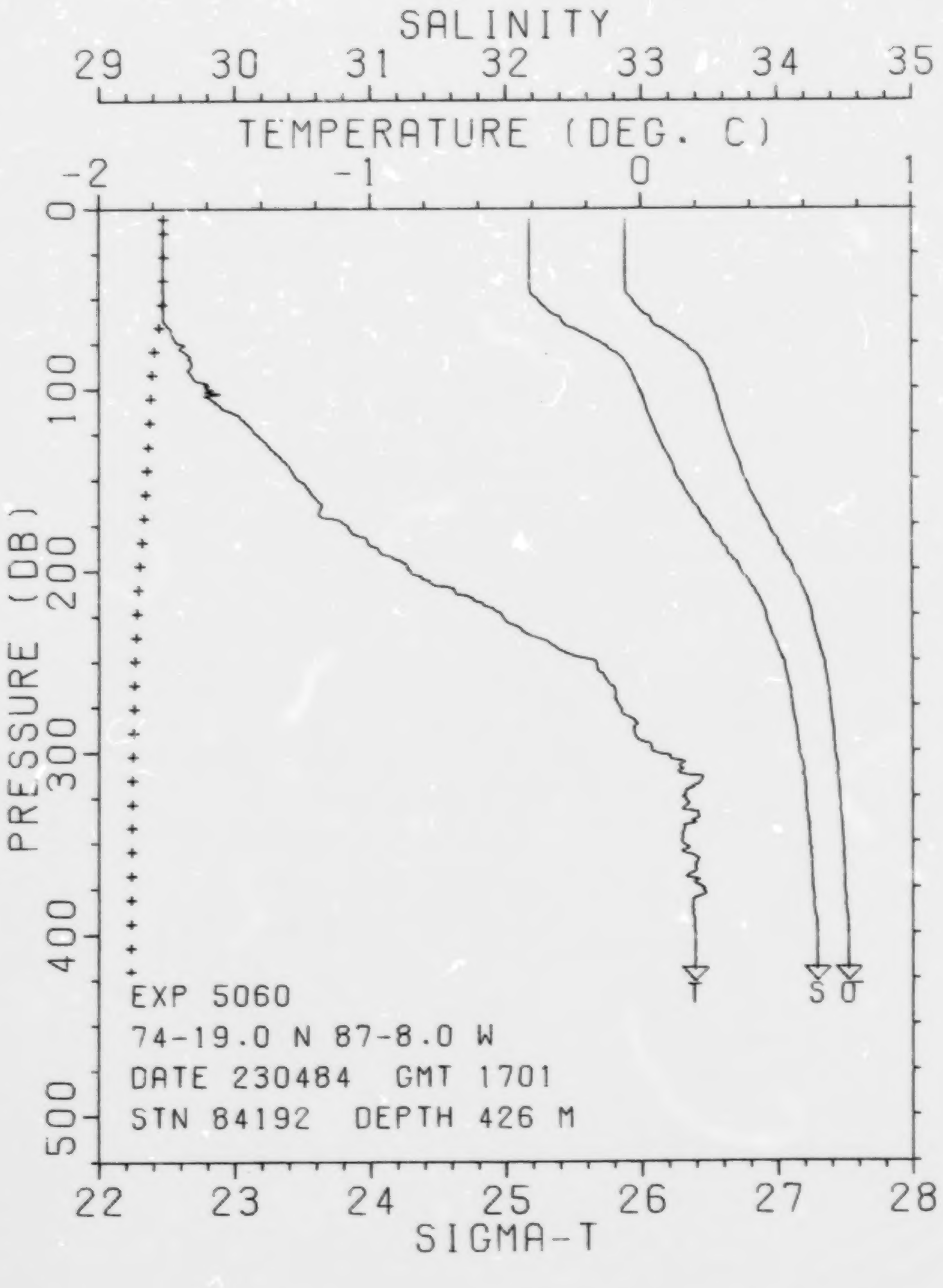
SIGMA-T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PRESSURE (DB)
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EXP 5060
74-19.0 N 87-8.0 W
DATE 230484 GMT 1701
STN 84192 DEPTH 426 M
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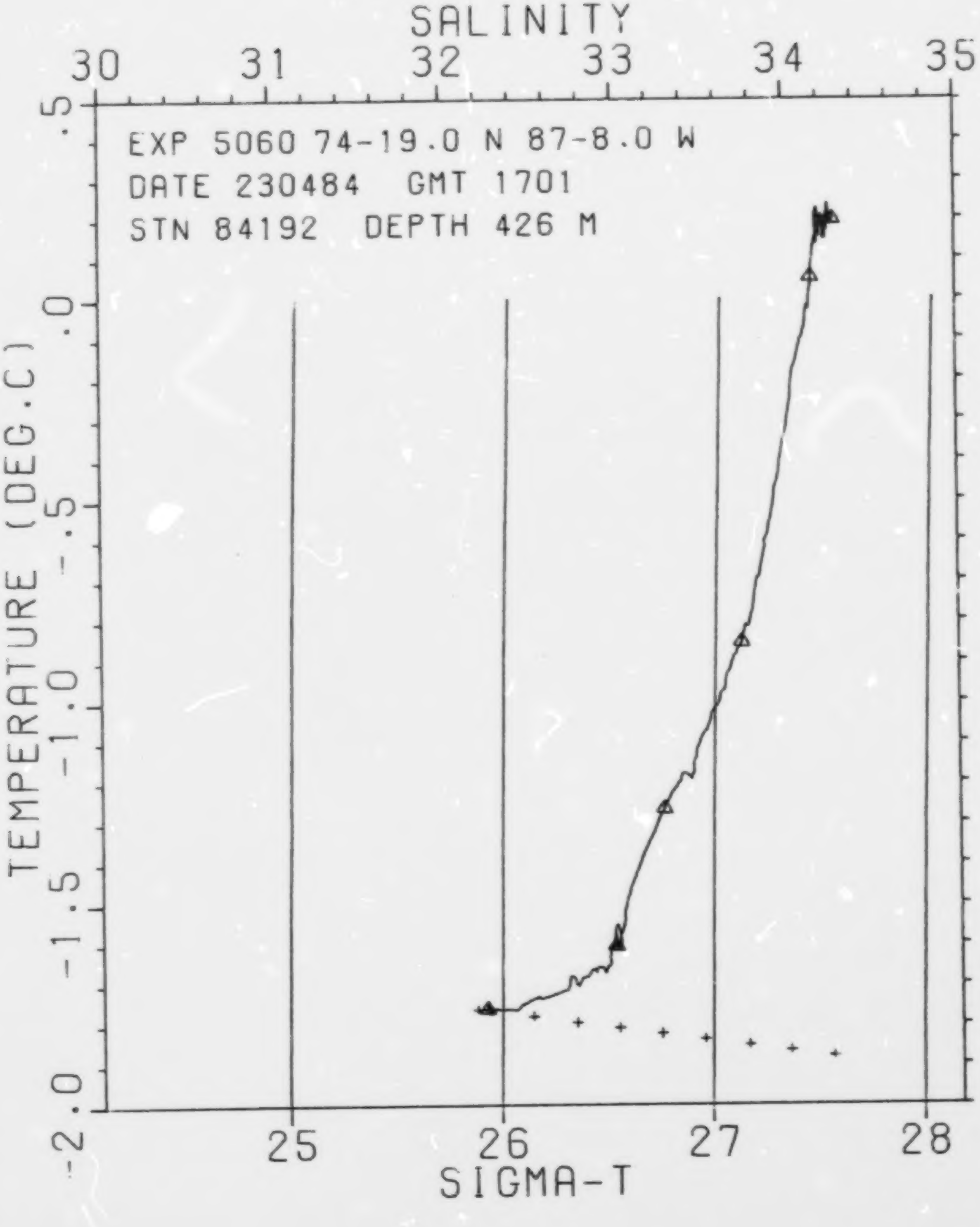
SIGMA-T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EXP 5060 74-19.0 N 87-8.0 W
DATE 230484 GMT 1701
STN 84192 DEPTH 426 M
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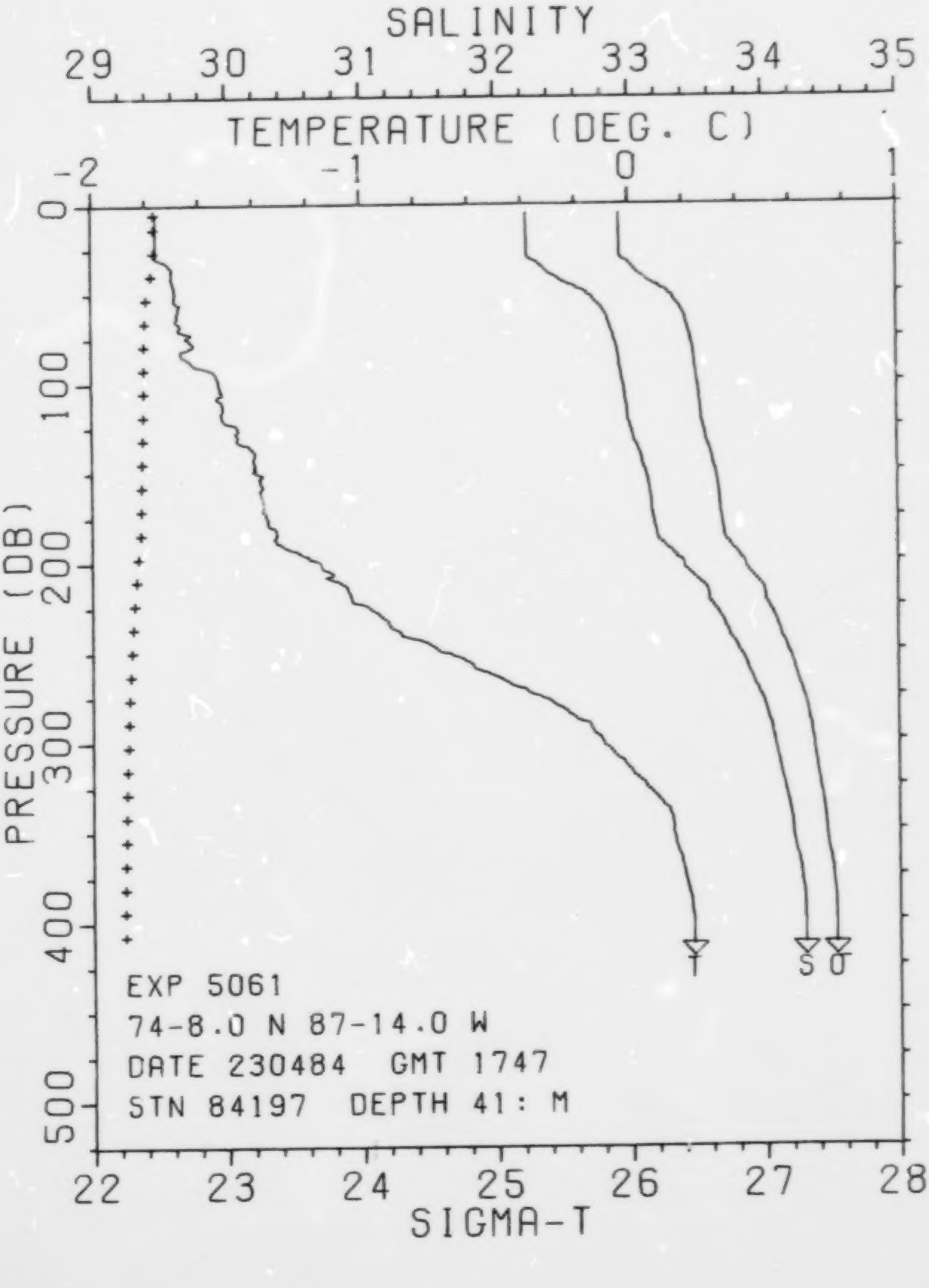
SIGMA-T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PRESSURE (DB)
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EXP 5061
74-8.0 N 87-14.0 W
DATE 230484 GMT 1747
STN 84197 DEPTH 41: M
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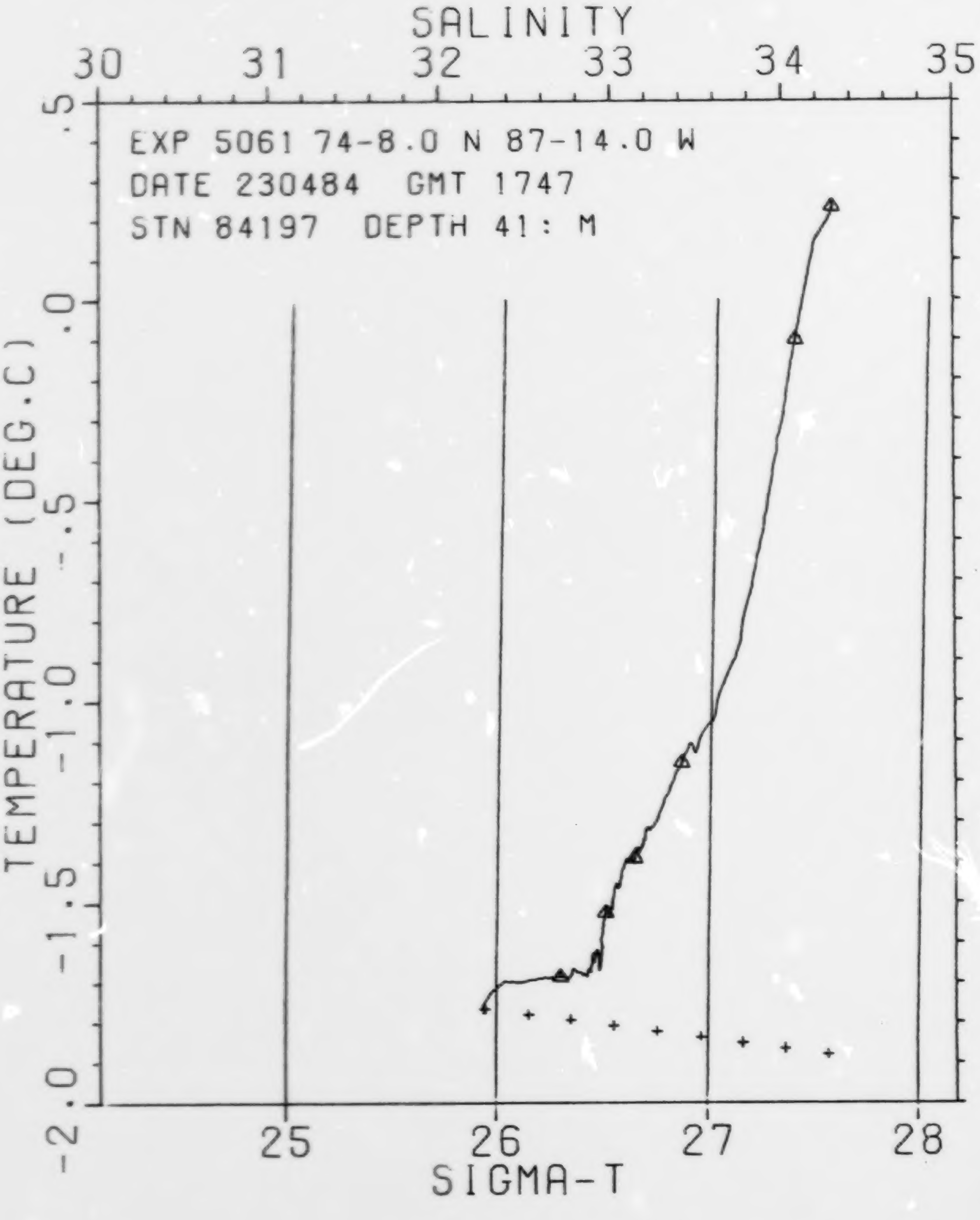
SIGMA-T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EXP 5061 74-8.0 N 87-14.0 W
DATE 230484 GMT 1747
STN 84197 DEPTH 41: M
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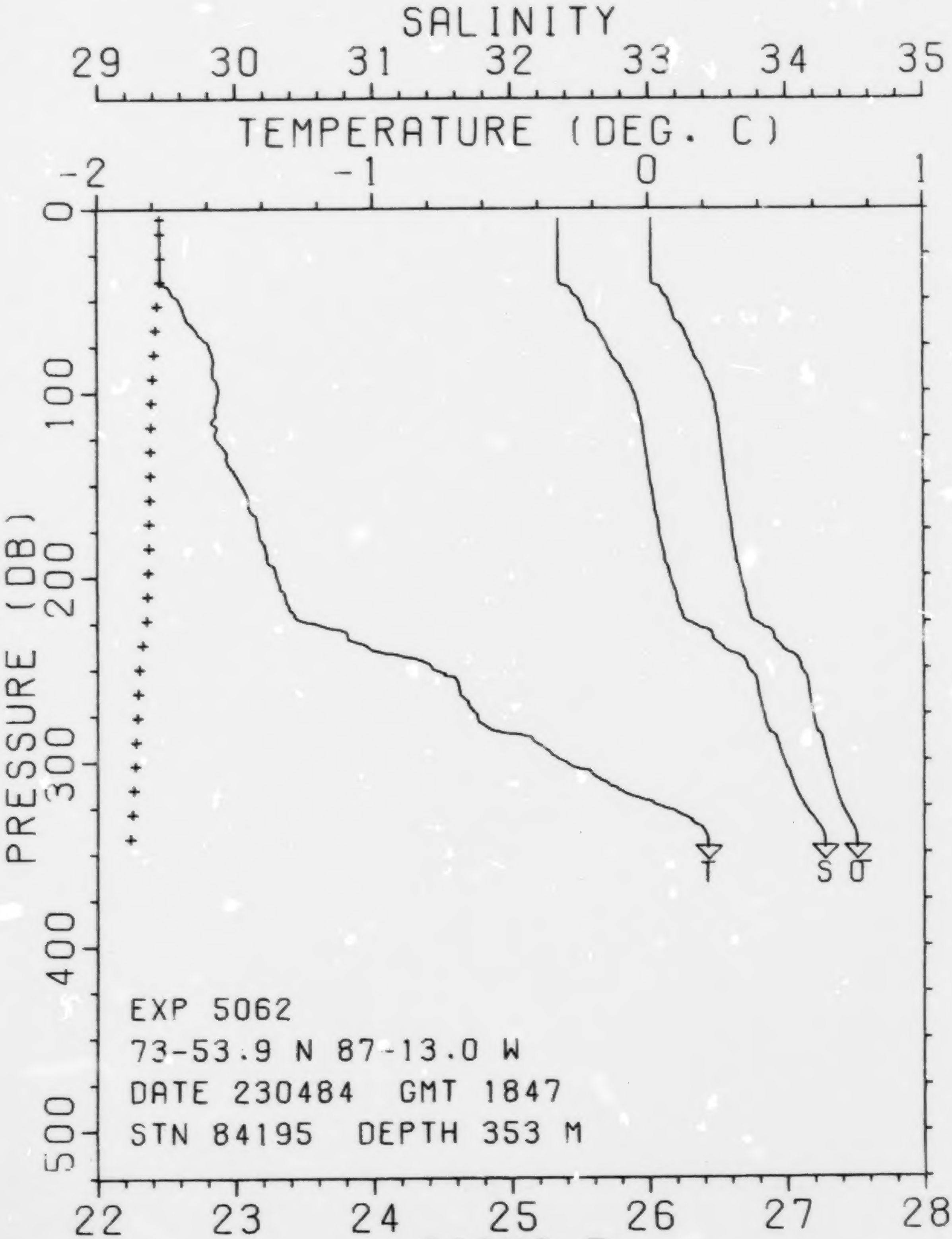
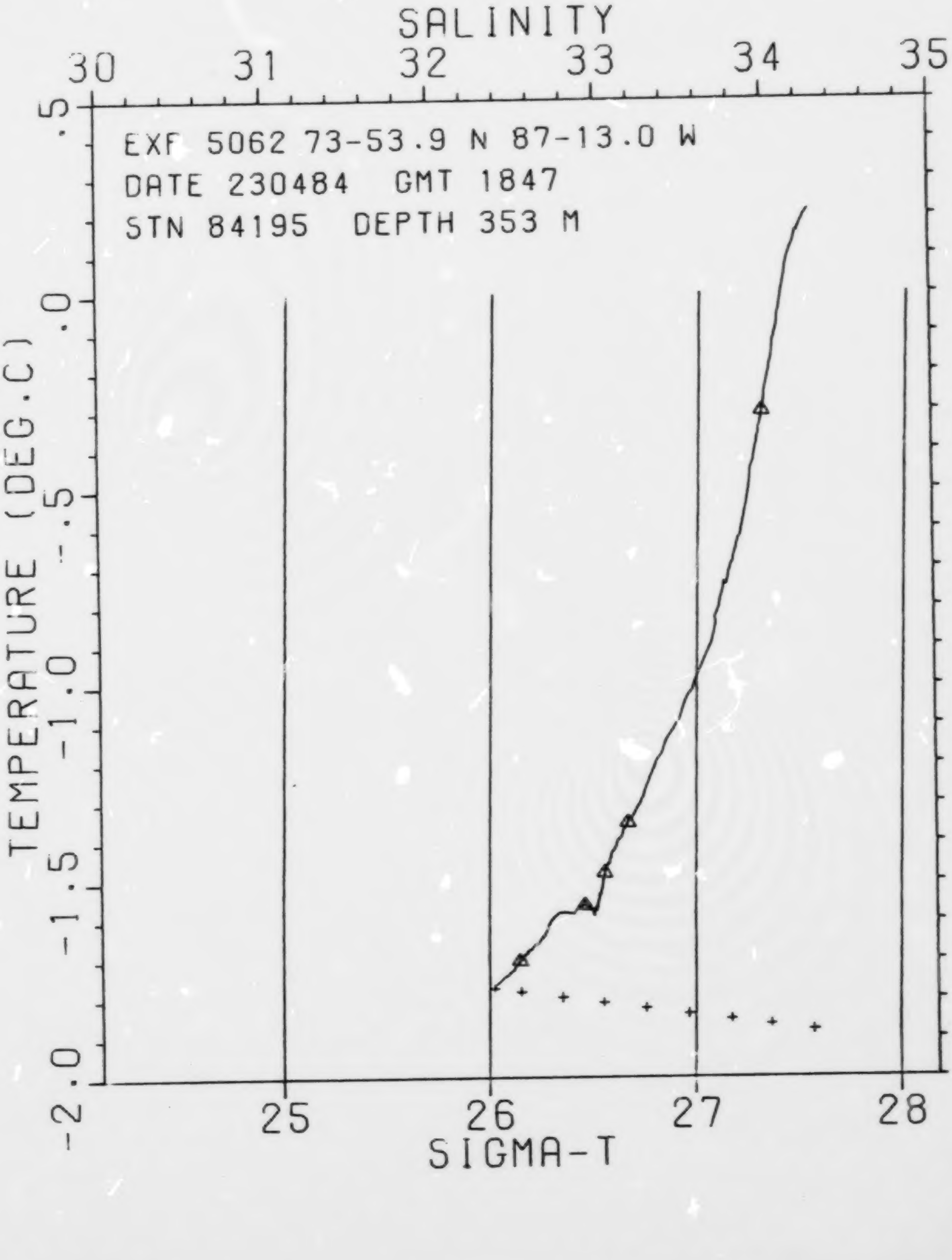
SIGMA-T



EXP 5062
73-53.9 N 87-13.0 W
DATE 230484 GMT 1847
STN 84195 DEPTH 353 M


SALINITY
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EXF 5062 73-53.9 N 87-13.0 W
DATE 230484 GMT 1847
STN 84195 DEPTH 353 M
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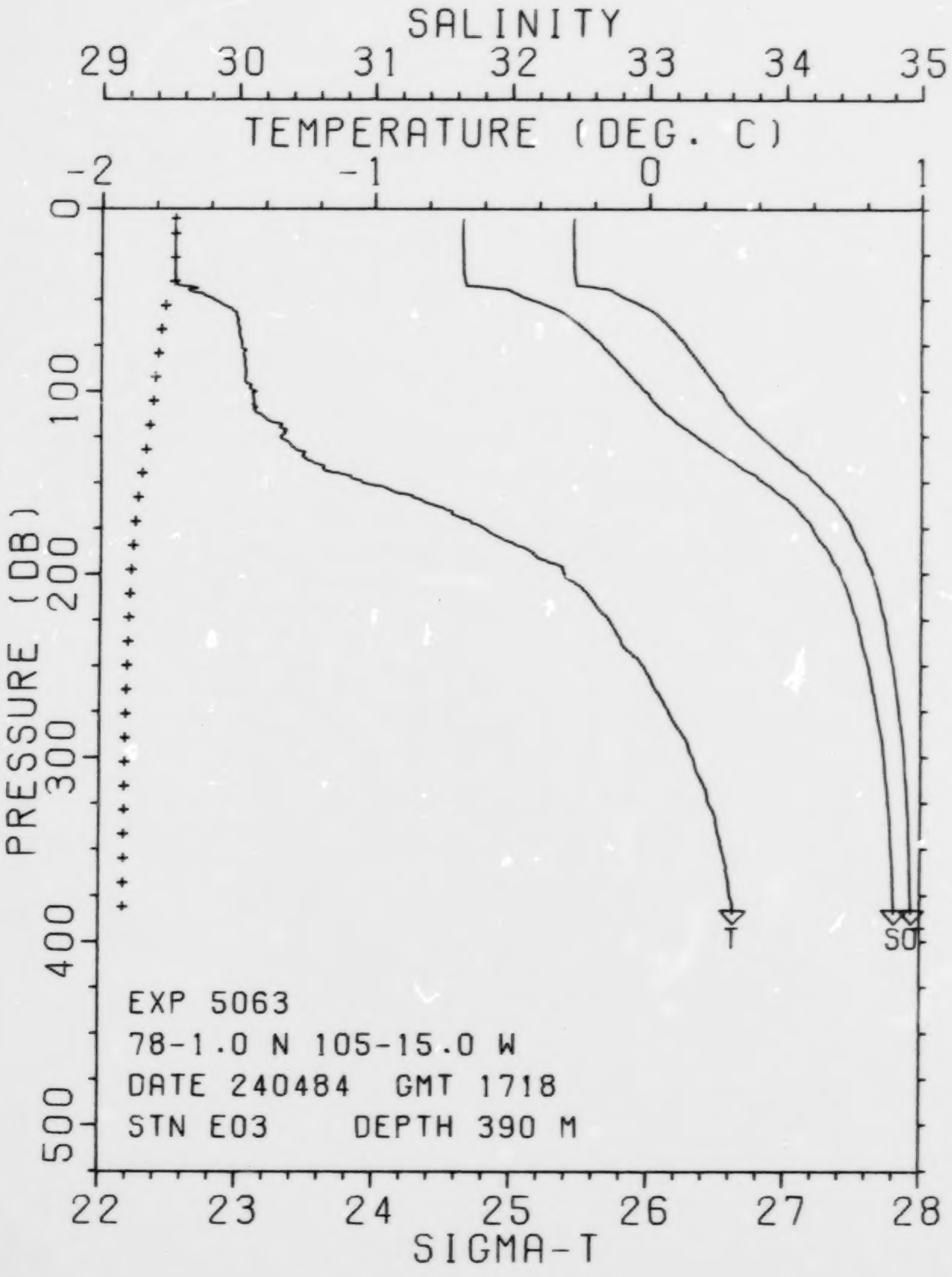
SIGMA-T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PRESSURE (DB)
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EXP 5063
78-1.0 N 105-15.0 W
DATE 240484 GMT 1718
STN E03 DEPTH 390 M
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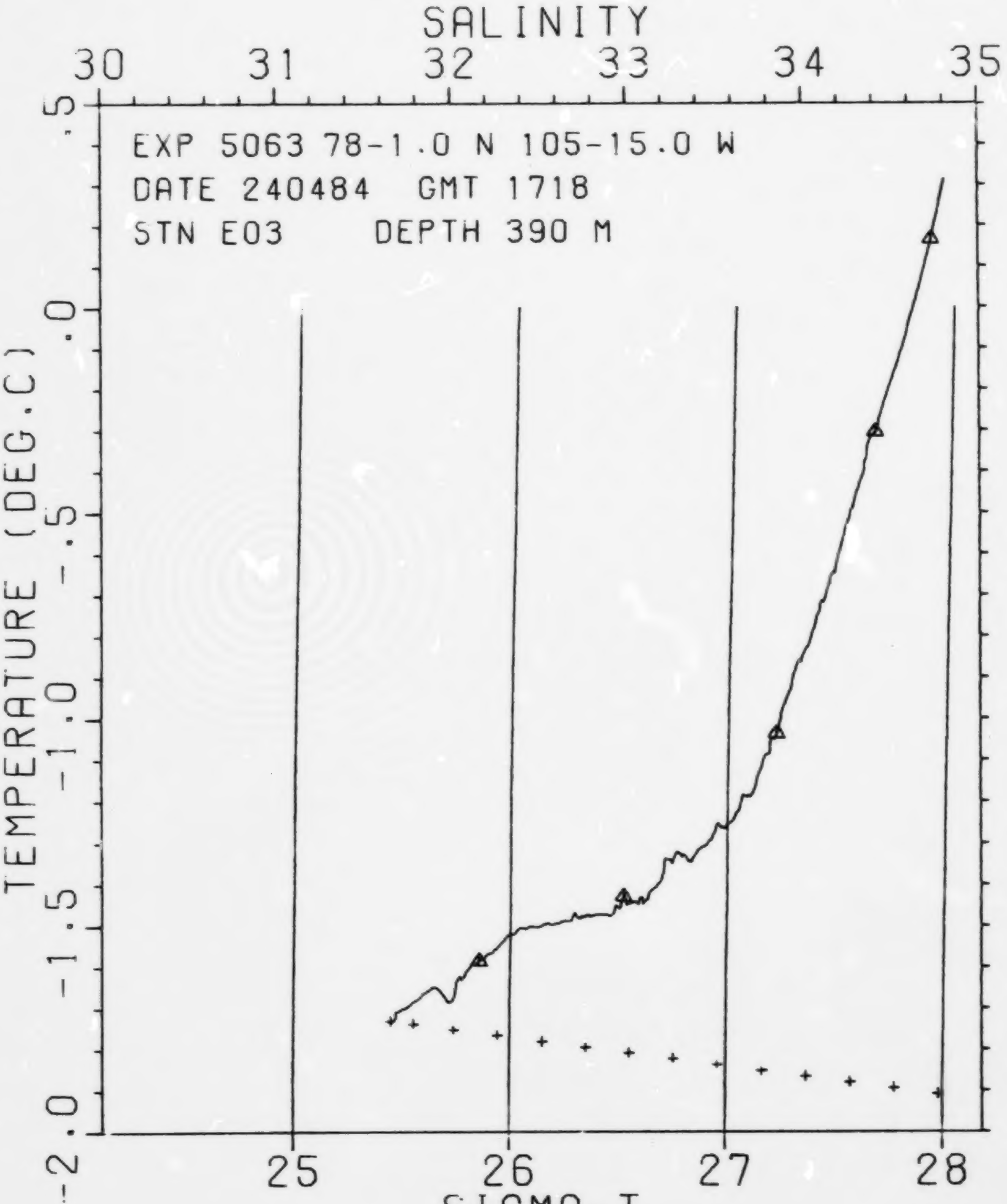
SIGMA-T


SALINITY
30
31
32
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35
EXP 5063 78-1.0 N 105-15.0 W
DATE 240484 GMT 1718
STN E03 DEPTH 390 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
25
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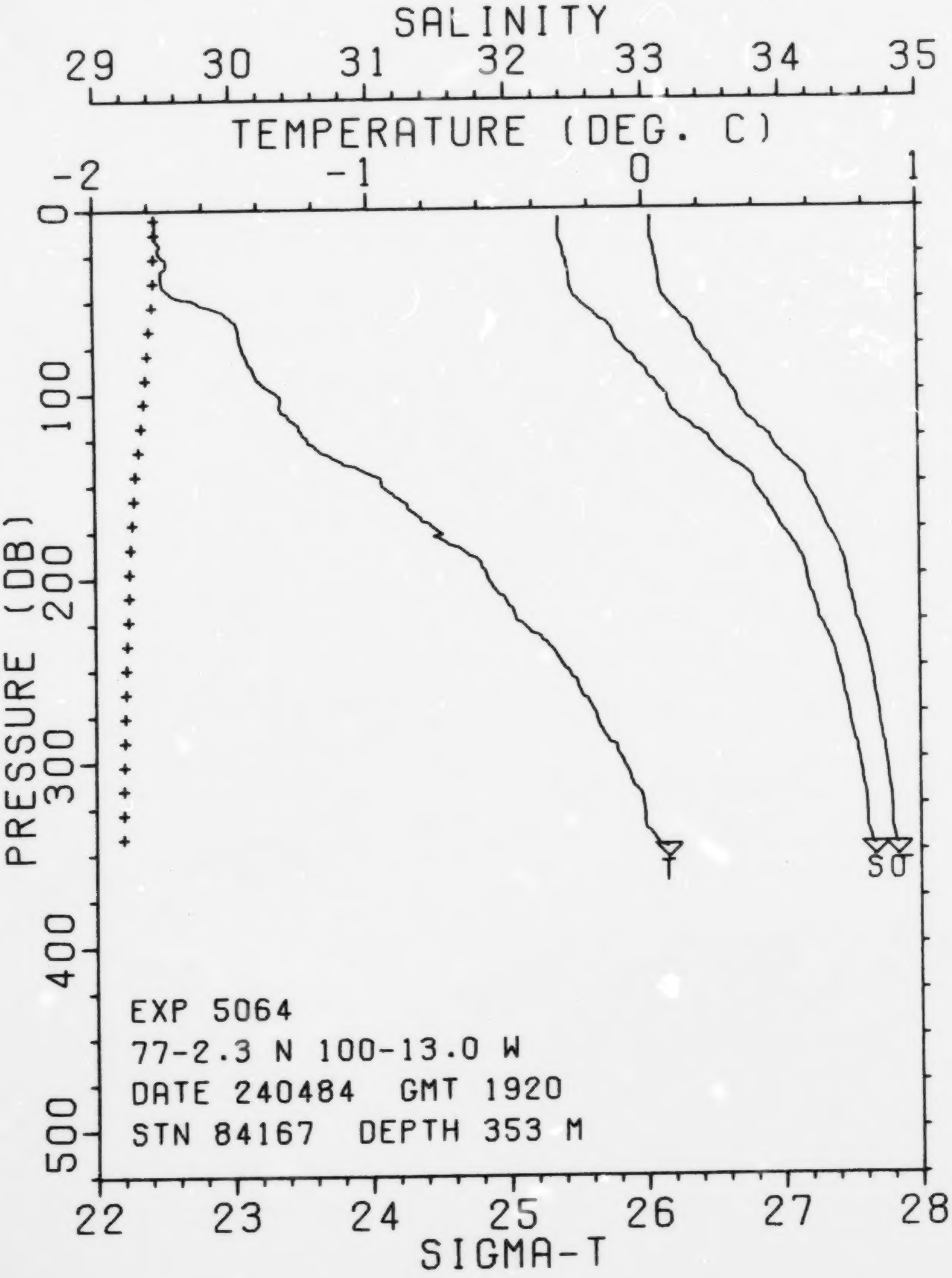
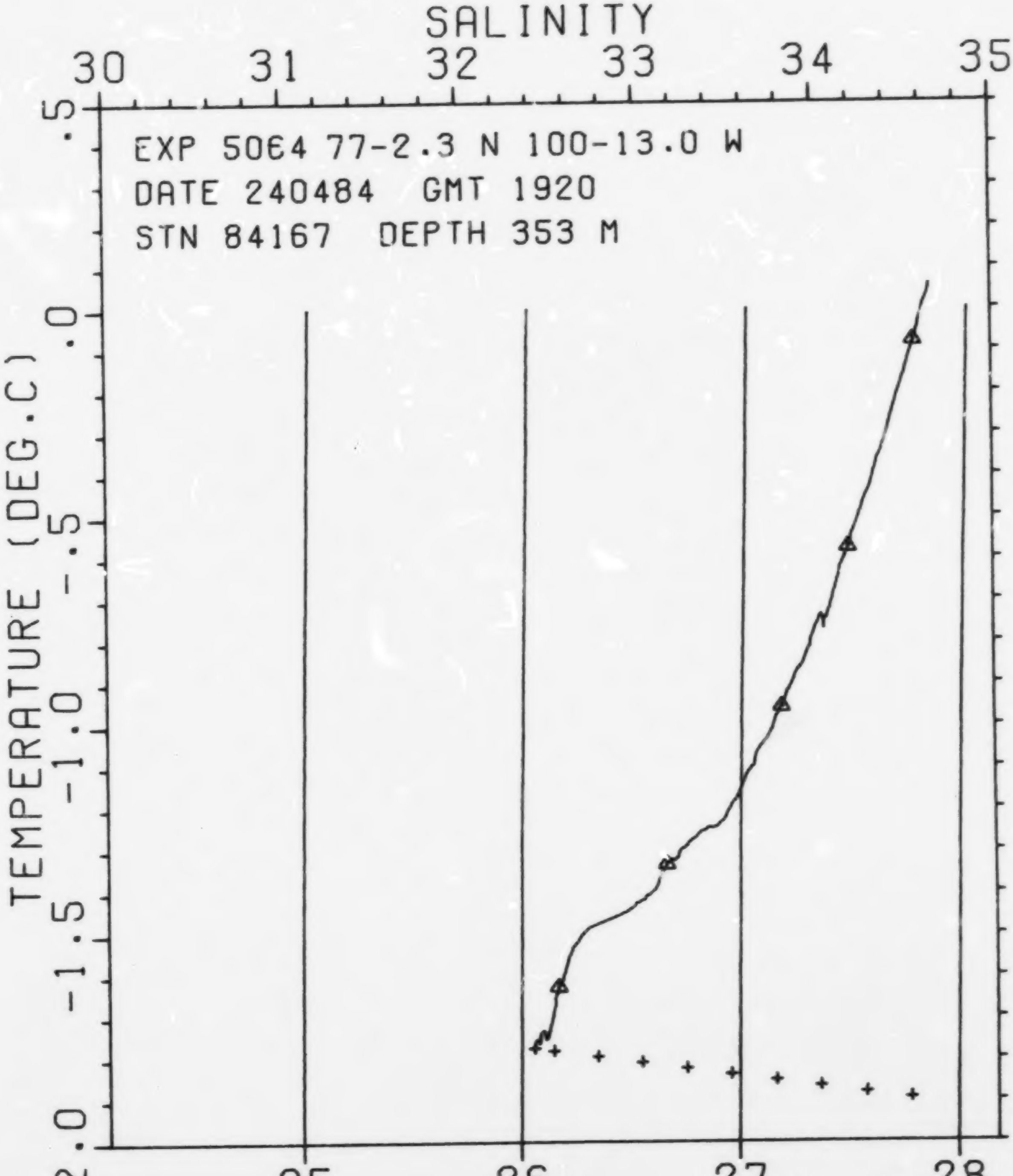
SIGMA-T



EXP 5064
77-2.3 N 100-13.0 W
DATE 240484 GMT 1920
STN 84167 DEPTH 353 M


SALINITY
30
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32
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EXP 5064 77-2.3 N 100-13.0 W
DATE 240484 GMT 1920
STN 84167 DEPTH 353 M
TEMPERATURE (DEG.C)
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-1.0
-1.5
-2.0
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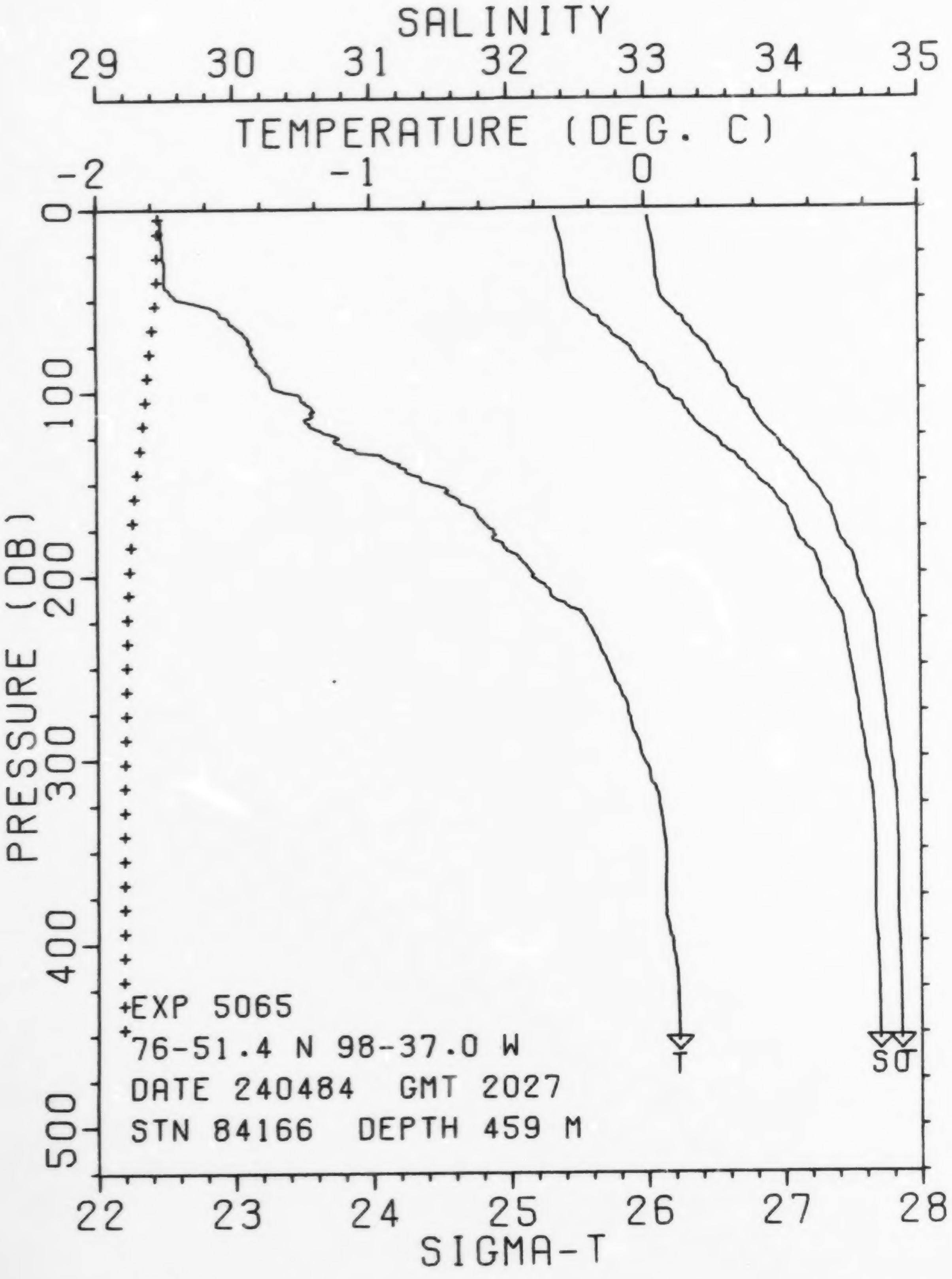
SIGMA-T


SALINITY
29
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TEMPERATURE (DEG. C)
-2
-1
0
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PRESSURE (DB)
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100
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EXP 5065
76-51.4 N 98-37.0 W
DATE 240484 GMT 2027
STN 84166 DEPTH 459 M
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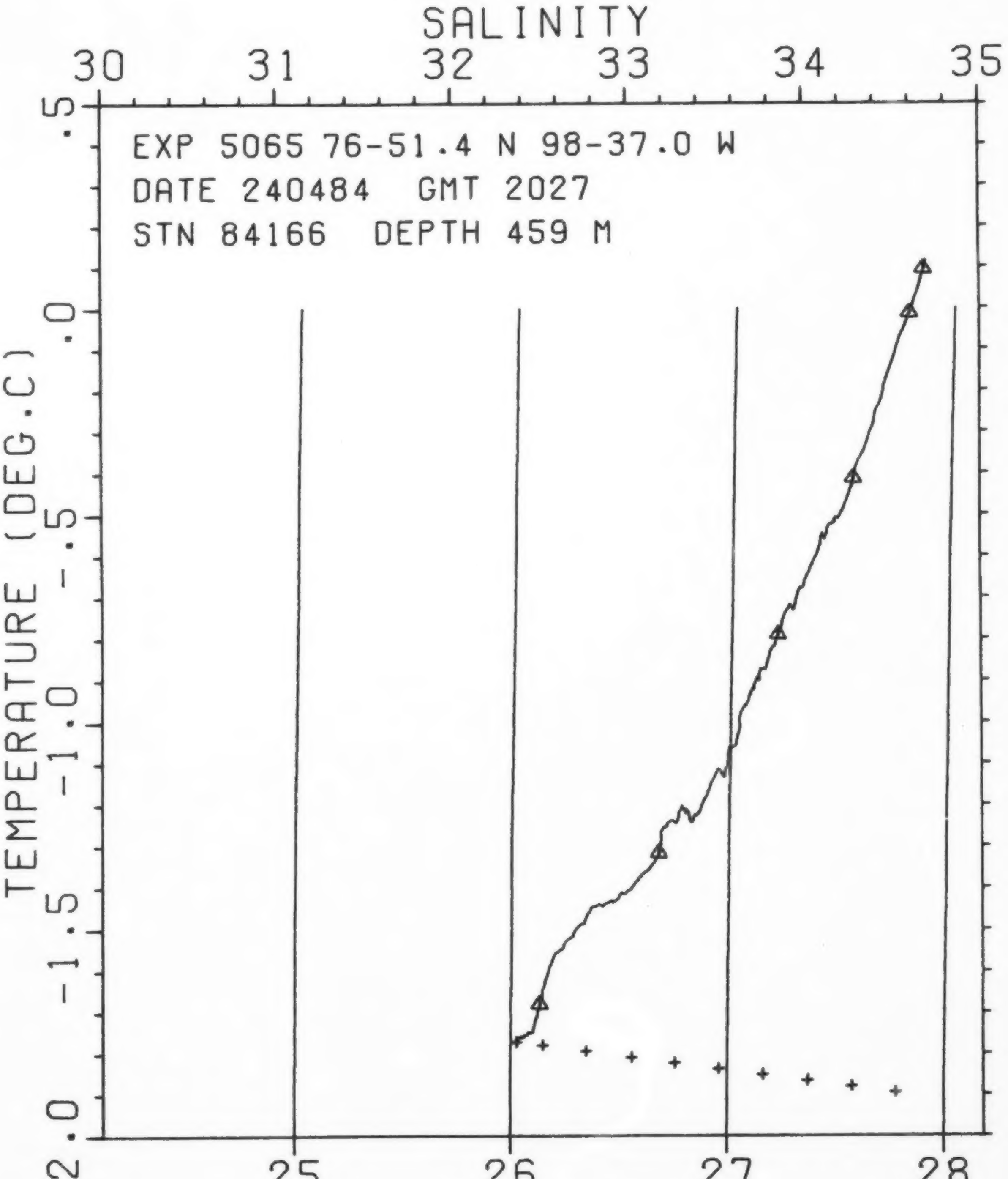
SIGMA-T


SALINITY
30
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EXP 5065 76-51.4 N 98-37.0 W
DATE 240484 GMT 2027
STN 84166 DEPTH 459 M
TEMPERATURE (DEG.C)
.5
.0
-.5
-1.0
-1.5
-2.0
25
26
27
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SIGMA-T